LINKING STRATEGY WITH SUSTAINABLE DEVELOPMENT

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Submitted in partial fulfilment of the requirements for the degree of
MASTER IN BUSINESS ADMINISTRATION

Graduate School of Business, Faculty of Management

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Date 2005

CONFIDENTIALITY CLAUSE

Date 2005

TO WHOM IT MAY CONCERN

RE: CONFIDENTIALITY CLAUSE

Due to the strategic importance of this research it would be appreciated if the contents remain confidential and not be circulated for a period of five years.

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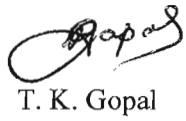

T. K. Gopal

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DECLARATION

This research has not been previously accepted for any degree and is not being currently submitted in candidature for any degree.

Signed.....

Date 20/04/2006

ACKNOWLEDGEMENTS

An undertaking as intense as this would not have been possible without the assistance of many people. It is not practical to single each and everyone who helped me surmount this challenge. However, there are certain individuals whose contributions stand out and I wish to express my gratitude and acknowledgements to them for their tenacity and support.

- To my family including my wife Natasha, step mum Soominther, sons Nishkar and Shrivaad for your encouragement and understanding that I had to spend time away from home during the course of this study. To my sons, I would not have engaged in this undertaking were it not for your presence in my life.
- To Professor Elza Thomson for her excellent supervision, encouragement, advice and charming personality.
- To Total South Africa for affording me the opportunity to embark on the MBA study programme.
- To all my personal, university, religious and working colleagues who were always available to lend assistance to me.

This Dissertation is dedicated to my dearly departed parents
Kishoon and Dowkee, Gopal

ABSTRACT

The population growth and sophisticated demands of present day lifestyle place tremendous pressure on organisations resulting in industrialisation and diminishing the planets natural resources. Sustainability of the environment for both the present and future generations calls for a paradigm shift of stakeholders especially business organisations to take measures to curb wastage and become more environmentally conscious.

A business's survival depends on the strategy it pursues in conjunction with the demands it faces in its operating environment. This thesis has evaluated Total's business using the tools of strategic management and studies the sustainable development strategies and initiatives adopted by this multinational corporation. The study is exploratory and links Total's business strategy to sustainable development.

An in depth literature review was carried out on the theoretical aspects of strategic management and sustainable development. These included the strategic process, macro; industry; and internal environments, Porter' five forces model, core competencies, strategic intent, and the evaluation of strategy using the criteria of suitability, acceptability and feasibility by Johnson and Scholes.

This followed through with a discussion of the major landmarks on sustainable development including the World Conservation Strategy, Brundtland Report, evolution of sustainable development, evaluation criteria, indicators, and the development of a model that was used in chapter four.

The case study of Total is also presented discussing historical, financial, strategic and sustainable development material both at Total's international operations in France and the South African subsidiary.

The research findings indicate that Total is a world-class company demonstrating success in the business, environmental and social arenas. It committed resources to both sustainable development and business development, producing good results in 2003. The company acceded to the requirements of Agenda 21, which called on countries to reduce pollution, emissions and the use of precious natural resources. Governments need to lead this change but emphasises that everyone can play their part in tackling non-sustainable practices. In this way, local actions can lead to the solution of global problems.

Successful realisation of sustainable development involves a change in both ideas and actions. Globally sustainable development has gained prominence and hence it is time that it became an integral component of the strategy development process.

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1.1 Introduction

The continuous increase in the population and growing sophistication of consumers has placed increased demands for petroleum products, subsequently exhausting natural resources and leading to spill over effects such as environmental destruction, pollution and health problems. Companies are increasingly turning their attention to public health concerns, safety awareness, environmental stewardship, and realising the importance of quality for the survival of both the present and future generations.

This study focused on two major areas, strategic management and sustainable development. Chapter one presented an overview of the theory, motivation to carry out the research, the value it accorded to the organisation, the development of the problem statement, formulation of objectives, the research design, limitations, and culminated with the synopsis of each chapter.

Strategic management is a dynamic process of aligning an organisation's strategies, performance and business results. It incorporates people, leadership, technology and processes. The setting and maintenance of the strategic direction of an organisation and its business is a continuous process. Regular decisions have to be made in order to manage changing circumstances and challenges of the business environment (Internet 9).

The term "sustainable development" made its first appearance in the World Conservation Strategy (WCS) (David, 1995). The Brundtland Report (1987) defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Internet 37).

1.2 Background

The environmental deterioration of the earth, the exponential increase in the world's population, the growing sophistication of its needs and activities for the maintenance of present-day lifestyles, and the process of industrialisation, is depleting the earth's essential resource (Fuggle and Rabie, 1994).

Of particular concern are industries whose final products are in great demand and simultaneously hazardous in nature, e.g. the petroleum industry, the sector on which this research has focused upon. Fuel and lubricant are major components of nearly every

industry's value chain featuring as a cost component in the production stages, inbound, and outbound logistics.

Oil keeps the wheels of industry well lubricated with almost every commodity having an imprint of fuel cost. Humanity has realised that energy is life. Any movement involves energy, and who can imagine life without movement (Internet 8).

Petroleum is an organic substance found underground in many parts of the world. The name is derived from two Latin words, petra meaning rock and oleum meaning oil (Total, 1972). This sector is governed by a complex system of agreements between the government and the oil industry, which essentially regulate the price of fuel, its production, distribution, transportation and sales (Internet 6).

The global oil industry, through the International Petroleum Industry Environmental Conservation Association (IPIECA) played a role in promoting and adopting sustainable practices in its worldwide operations. South African efforts were prominent and two visible examples are:

- Creation of the ROSE Foundation (Recovered Oil Saves the Environment), which ensures that waste oil, is not disposed of in ways that damage the environment.
- Reduction of the sulphur content in diesel to improve urban air quality (Internet 7).

Total's business is to supply energy in variety of forms, including oil, gasoline, diesel fuel, kerosene, natural gas, electricity and coal, as well as petrochemicals and chemicals. Industrial activities, in addition to focusing on profitability, have to meet certain social and environmental imperatives. Firstly to protect the environment, today and for the future, by conducting research and development into processes and products that generates fewer environmental releases. Secondly to protect the health of its neighbours by ensuring that any health risks as to which they may be exposed are minimal and, more generally, protecting human health by ensuring that products are safe. Thirdly to take into account that needs of future generations by conserving, natural resources and energy. These issues were the focus of Total's sustainable development process that incorporated ambitious objectives for reducing environmental pollution and conserving energy and natural resources, as well as reducing the health impact of its operations (Internet 2).

Total set up sustainable development departments at the parent company in France and recently in South Africa to manage the various strategies and to comply with global

requirements. This study focused on evaluating Total's business and sustainable development strategies at the parent company and converged onto the South African subsidiary.

1.3 Motivation

Sustainable development is gaining increasing recognition in the government, industrial and domestic sectors. The preservation of the planets resource for future generations depends on commitment from every individual. The natural environment includes the air, water, land, resources, flora and fauna and these must be conserved and protected. This study will create awareness and subsequently promote sustainable development. The benefits to Total will be improved image, increased publicity and competitive advantage.

1.4 Value

It will help organisations to ensure business continuity in the turbulent, demanding and competitive environment. Companies will be inspired to incorporate environmental and social concerns into their business strategies. Benefits also include minimising losses, continuous improvement in quality, adding value to the business process, increasing profitability and the creation of a healthier and safer environment. In addition it will promote the achievement of best practices in the work environment. Further, organisations will be encouraged to comply with both local and international legislation. Finally, areas for improvement will be highlighted in order to support sustainable development and gain competitive advantage.

1.5 Problem Statement

The business environment is characterised by:

- Increased competition amongst the various players.
- Stringent legislation.
- Depletion of natural resources
- Environmental and social concerns

The problem statement, therefore, is:

Have Total's strategies been successful in ensuring its business continuity, its growth and have they highlighted the importance of sustainable development in preserving the environment for present and future generations and to gain competitive advantage?

1.6 Objectives

- To evaluate Total's profitability using the tools of strategic management.

- To establish Total's compliance with sustainable development by analysing key performance indicators.
- To establish the extent to which Total has contributed to sustainable development through literature research.
- To establish the link between Total's sustainable development and business strategies.

1.7 Research Design and Methodology

Research design is the plan and structure of the investigation to obtain answers to research questions. It expresses the structure of the research problem and the investigation plan, outlining what a researcher will do from writing hypothesis to the final analysis of data (Cooper and Schindler, 2003).

1.7.1 Preamble

This study was exploratory in nature with the intention of evaluating Total's business strategies and highlighting its sustainable development initiatives. A qualitative approach was used in carrying out this study.

1.7.2 Control of Variables

In terms of a researcher's ability to manipulate variables, an ex post facto design method was selected. This was applicable here since there was no control over the variables in the sense of manipulating them (Cooper and Schindler, 2003).

1.7.3 The Purpose of the Study

This study was descriptive in nature with the purpose of demonstrating the link between strategic management and sustainable development. Companies can be profitable whilst investing in corporate social responsibilities and be committed to environmental and social concerns. This study was exploratory and was conducted using a qualitative approach with a case study as a basis of the research. A qualitative approach ensured a holistic perspective with the aim of understanding the case study. It also enabled naturalistic inquiry so events were understood as they occurred.

Qualitative research approaches have traditionally been favored when the main research objective is to improve our understanding of a phenomenon, especially when this phenomenon is complex and deeply embedded in its context. Its many methodologies and techniques have helped researchers get a better grasp of a variety of management situations. Qualitative research has now grown into a wide domain, having evolved much beyond its

original scope of qualitative data collection. However, a consensus has yet to be reached to determine the exact qualitative research boundaries and the main components of a qualitative research design (Internet 3).

The research was about linking strategy to sustainable development and therefore the use the quantitative or triangulation approach was not suitable. Qualitative implies that data are in the form of words. Quantitative data are generally evaluated using descriptive and inferential statistics.

1.7.4 The Time Dimension

A longitudinal study approach was used allowing looking back at the time and tracking any changes and events that was relevant to the proposed study.

1.7.5 Method of Data Collection

This study was exploratory in nature and a case study formed the basis of the research. A qualitative approach was used enabling naturalistic inquiry so that events were understood as they occurred. Data was collected through literature search in the organisation.

1.7.6 Secondary Data Analysis

This entailed looking at all the gazetted legislation and white papers, pertaining to the study at hand. The archives of university libraries were investigated for any prior research or studies. Online searches were conducted to seek latest developments in the strategy and sustainable development arena and other pertinent information related to strategy.

1.8 Ethical Considerations

Ethical standards were maintained throughout the study and the process has:

- Ensured that the study was conducted as objectively as possible with no bias.
- Ensured that all information gathered was used for research purposes only.

1.9 Nature and Form of Results

The dissertation was presented in a written format containing all the necessary information to achieve the stated objectives. The study comprised of the elements listed in the research design. There were five chapters, commencing with the introduction, followed by the literature review, the case study of Total, evaluation of strategies and finally the conclusion. A bibliography was also attached.

1.10 Limitations

- This study interrogated the strategic focus area of Total's commercial and specialties business unit to a larger extent compared to the other units of the company.
- It was carried out on the parent company in Paris and converged onto the South African subsidiary.
- An intensive interrogation of competitor activity was not carried out as the study concentrated on linking Total's business strategies to sustainable development.
- Financial analysis was also limited to prevent exposure of confidential information to competitors.
- The period of analysis for financial, and corporate social responsibility indicators spanned the years 2001 to 2003 as up to date information was unavailable at the time of literature search.

1.11 Structure of the Research

Chapter 1: Overview

This chapter provided an overview of the proposed research, including the background, relevant theory on strategic management and sustainable development, motivation to carry out the research, the value it accorded to the organisation, the development of the problem statement, formulation of objectives, the research design, limitations, and conclusion.

Chapter 2: "Strategy and Sustainable development in context"

Here the highlights were the theoretical aspects of strategic management and sustainable development, supported by models relevant to the industry under study, theory and evolution of sustainable development by various authors and institutions. The layout took the form of identifying key ingredients that ensured the success of any business, typically components of strategic management.

Chapter 3: Total "We are there for you"

The case study of Total was presented spanning the head office in Paris and the South African subsidiary. Company history, financial information, strategies, indicators, environmental and social initiatives taken by Total was discussed. Total identified five main areas of action, as follows: leveraging oil and gas resources, developing new energies, improving products and their use, integrating operations into the local community and promoting sustainable development.

Chapter 4: Evaluation of Total's sustainable strategies.

This chapter evaluated Total's current strategies using the tools and models identified in chapter 2 at France and South Africa generating information that was used for comparison and recommendations in chapter 5. The macro, industry and internal environments, internal financial and strategic planning documents, and corporate social responsibility indicators were used to evaluate the position of the company. Graphical representation of the key focus area provided insight into the progress made over the years of study.

Chapter 5: Recommendations and Conclusion

Total is a successful multinational company committing resources to both sustainable development and business development and produced good results in 2003. The company had sufficient reserves to withstand sudden changes in the environment. Agenda 21 called on countries to reduce pollution, emissions and the use of precious natural resources. Governments needed to lead this change but emphasised that everyone had to play their part in tackling non-sustainable practices. In this way, local actions lead to the solution of global problems.

1.12 Conclusion

This study focused on Total, an international petroleum company, and its position in the petroleum sector with chapter 1 providing an overview of the intended research. The study was exploratory in nature and a case study formed the basis of the research using a qualitative approach. The major value of this thesis is the positive impact that sustainable development has on the environment and its strategic use as competitive tool. In order to provide directions and scope, a problem statement was synthesised and corresponding objectives were set. Due to the sensitive nature of information and to assure confidentiality of stakeholders ethical considerations were taken into account. The foundation of the research was laid down by outlining the structure which comprised of five chapters as follows: Chapter 1: Overview, Chapter 2: "Sustainable development and strategy in context", Chapter 3: "Total we are there for you", Chapter 4 "Evaluation of Total's sustainable strategies. Chapter 5: "Recommendation and Conclusion"

In Chapter 2 the theory of strategic management and sustainable development will be discussed.

CHAPTER 2: Strategy and Sustainable Development in Context

2.1 Introduction

The sustainability of a business depends on the strategy that it pursues in conjunction with the demands that it faces in its operating environment. "Every company encounters occasions in which it needs to adapt its strategy to shifting industry and competitive conditions, newly emerging buyer preferences and requirements, the initiatives of rival firms to grab increased market share, the appearance of fresh opportunities and threats, advancing technology, and other significant events which affects its business" (Thompson and Strickland, 2003:16).

Strategy formulation is based on adapting a business to its environment. A supportive strategy places a business in a competitive position in its market. Environmental conditions affect the strategic planning process and demand input from managers and strategists. Sustainability and environment are key words in this study as they form part of the vocabulary of strategic management and sustainable development.

Sustainable development covers a much broader ground than those of environmental protection, as is sometimes fallaciously thought. It calls for potentially drastic changes in our current modes of production, consumption and decision-making. Sustainable development is not a fixed state but a balanced, adaptive process of change (van den Bergh, 1996).

This chapter highlights the theoretical aspects of strategic management, supported by models, that are likely to be relevant to the industry under study, and it also discusses the theory and evolution of sustainable development by various authors and institutions. The layout takes the form of identifying key ingredients to ensure the success of any business, typically components of strategic management. This is followed by an in depth discussion of the theory of sustainable development with the intention of linking it with the business strategy.

The chapter ends with the discussion and the graphical representation of the model that form the basis for evaluation in the fourth chapter.

2.2 Strategy, Strategic Management Process & Strategic Planning

The term strategy is derived from the Greek word strategos, meaning "general". This term was used by the military, which meant grand plans. Three definitions, which indicate the most common use of the word strategy, are (Koontz 1990:48, 88):

- "General programs of action and deployment of resources to obtain comprehensive objectives"

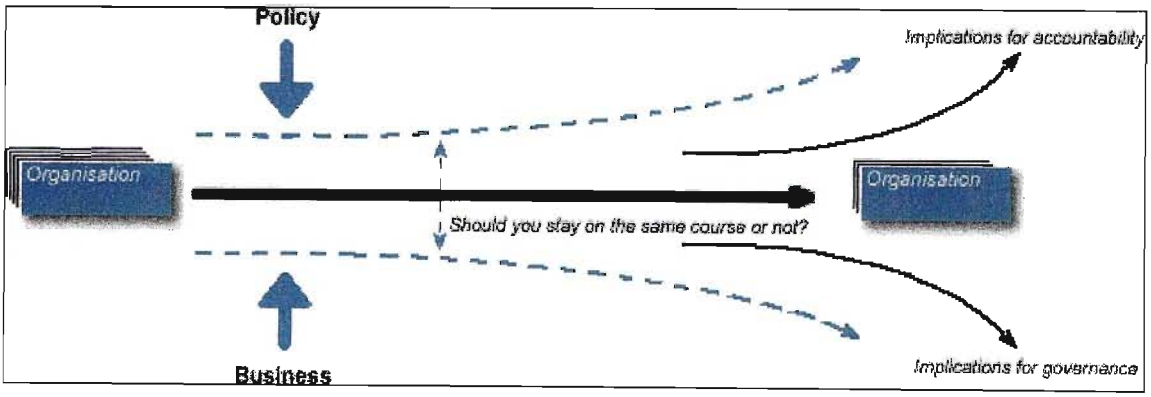
- "The program of objectives of an organisation and their changes, resources used to attain these objectives, and policies governing the acquisition, use, and disposition of these resources".
- "The determination of the basic long term objectives of an enterprise and the adoption of courses of action and allocation of resources necessary to achieve these goals".

A company's business definition, its growth goal and profitability have to be decided in light of the definitions presented.

According to Drucker (2003:4) "Strategic Management is not a box of tricks or a bundle of techniques. It is analytical thinking and commitment of resources to action".

Strategic management is a dynamic process of aligning an organisation's strategies, performance and business results and it incorporates people, leadership, technology and processes. Setting and maintaining the strategic direction of the organisation and its business is a continuous activity and regular decisions have to be made in order to manage with changing circumstances and the challenges of the business environment. To advance the business, a course has to be set in a particular direction, but subsequent policy drivers (such as new performance targets) or business drivers (such as increased demand for services) may alter the organisation's direction (Figure 2.1). When a decision has to be taken to steer the organisation back on course or to go with the new direction, it has to be accounted for and similarly there could be implications for governance if relationships with partners change (Internet 9).

Figure 2.1 Strategic Management



Source: Strategic Management, 2004. (Online), available at http://www.ogc.gov.uk/sdtoolkit/reference/

The organisation has to be able to respond effectively to both problems and opportunities as they arise. Organisations are now working towards an outward-focused view of the way

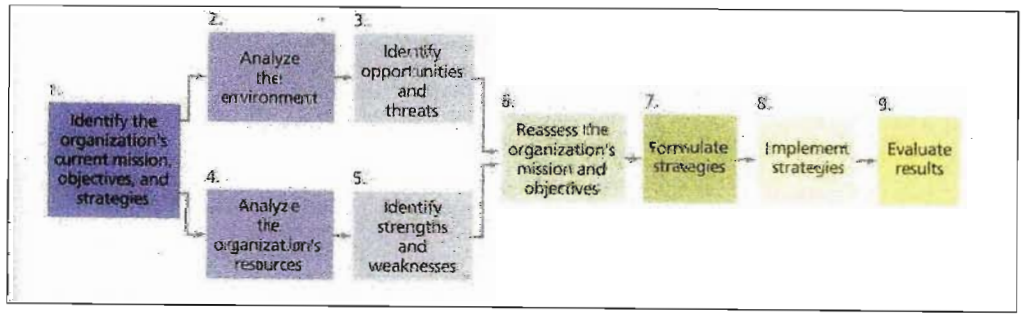
services should be provided, a fundamental shift from the traditional focus on internal concerns.

Business life cycles are shortening with environments becoming more turbulent and competitive. Executives who don't see the new realities and adapt to them with lightning speed will be left behind in the race for customers and profits (Internet 10).

Strategic management is a structured process that a company has to follow for it to realise its objectives. It involves nine steps (Figure 2.2) starting from identifying the organisations current mission, objectives and strategies, followed by environmental scan and resource analysis. A SWOT analysis is then carried out where the company evaluates its strengths and weakness in the internal environment, and opportunities and threats are identified in the external environment. The last four steps involve the review of the organisations mission and objectives, formulation of strategies, implementation of strategies and finally strategy evaluation.

During strategy development management must go through the above process. The first seven steps encompass strategic planning. Crucial to the success of the whole process is the last two steps, that is, implementation and evaluation.

Figure 2.2 Strategic Process



Source: Stephen P. Robbins, David A. Decenzo., 2001, Fundamentals of Management 3rd Edition, Prentice Hall New Jersey: 91

To be effective, strategies and policies must be put into practice by means of plans, increasing in details until they get down to the nuts and bolts of operations. Tactics, which are the action plans must be developed in order to support and execute the strategies. Planning includes defining objectives or goals, establishing strategies to achieve these objectives and developing a hierarchy of plans to co-ordinate the activities. Strategy and planning together form the basis of strategic planning.

"Without a strategy the organisation is like a ship without a rudder" (Thompson and Strickland, 2003:4).

2.3 Industry and Competitive Analysis

Kenichi (2003) advocates that analysis is the critical starting point of strategic thinking. The strategy that a business pursues must flow from a solid analysis of the external and internal environment, that is, considering the industry competitiveness and the company's own capabilities, resources, internal strengths and weakness, and market position.

Businesses operate in environments that comprise of several layers, with each having a different influence on the company and they need to be examined individually as they can impact on the direction and action that a company can pursue. These layers include the macro environment, the industry, strategic groups and the organisations environment (Johnson and Scholes, 2002).

2.4 The Macro-Environment

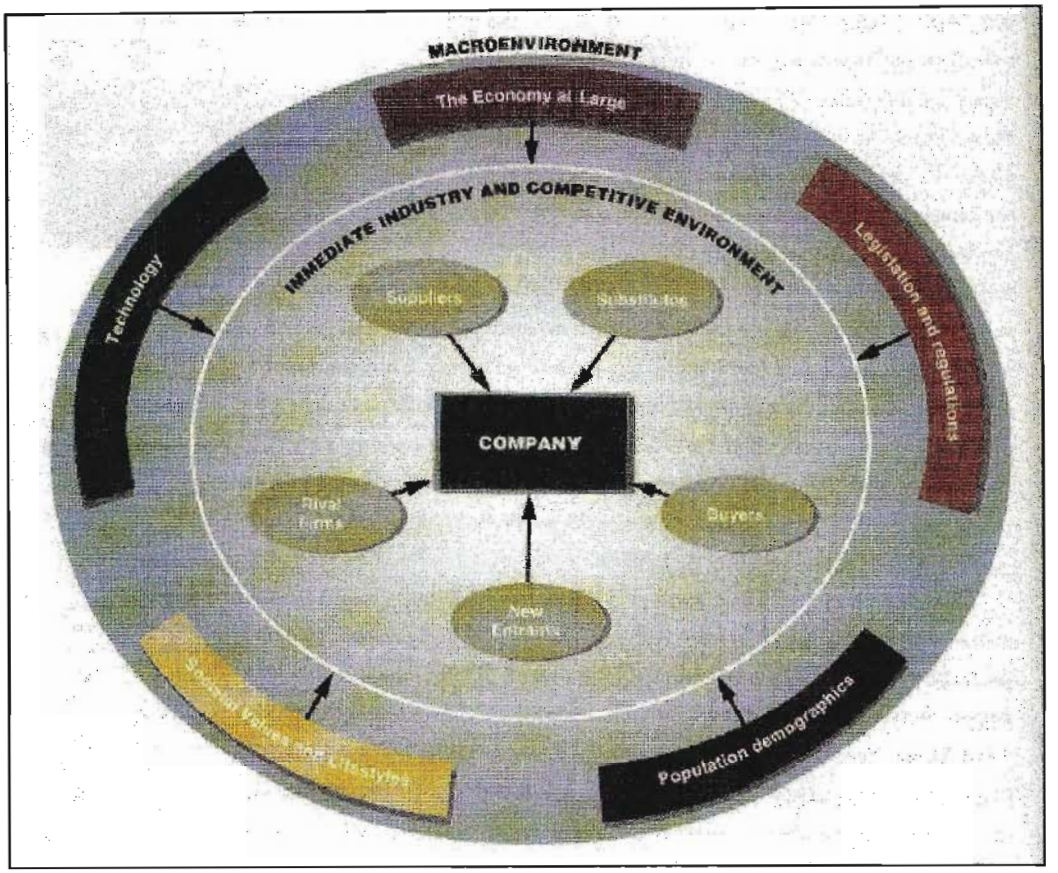
"All organisations operate in a macro environment consisting broadly of the economy at large, population demographics, societal values and lifestyles, governmental legislation and regulation, technological factors, and the company's immediate industry and competitive environment as depicted in figure 2.3 (Thompson and Strickland 2003).

The macro environment includes all relevant forces outside the company's boundaries that have a bearing on the decisions it ultimately makes about its business model and strategy (Figure 2.3).

A scan of the macro-environment can be expressed in terms of the acronym PESTEL standing for **P**olitical, **E**conomic, **S**ocial, **T**echnological **E**nvironment and **L**egal (Figure 2.4).

- Political factors generally pertain to tax policies, employment laws, environmental regulations, trade restrictions and tariffs, political stability, and government policies.
- Economic factors are concerned with economic growth, interest rates, exchange rates and inflation rate.
- Social factors include the demographic and cultural aspects of the macro environment and focus on health consciousness, population growth rate, age distribution, career attitudes and safety.
- Technological factors include R&D activity, automation, technology incentives and technological change.

Figure 2.3 Macro Environment

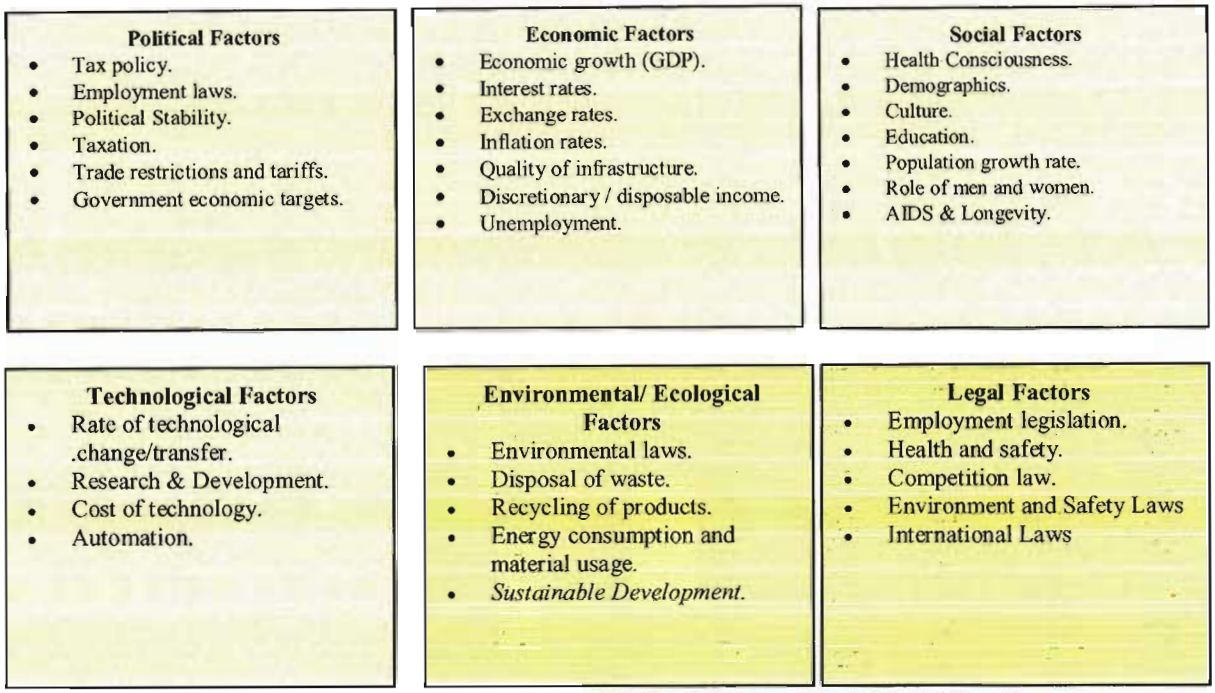


Source: Thompson & Strickland (2000). Crafting & Executing Strategy 11th Edition, McGraw-Hill: 74

- Environmental factors are instrumental in determining how a firm operates, as special processes such as waste disposal may need to be set up. The compliance to such legislation is facilitated by implementation of environmental management systems such as ISO 14001, supported by safety systems e.g. International Small Scale Safety Rating Systems (ISSSRS).

- Legal factors are concerned with rules governing employee and employer behaviour and also include those required by the management systems e.g. ISO 9000. Legislation feature in the political, economic, social, technology, and environmental components of the macro environment scan. In South Africa, examples include the Constitution, Bill of Rights, National Environmental Management Act, Atmospheric Pollution Control Act, National Conservation Act, Water Act, and OHS act.

Figure 2.4 PESTEL Analysis



Source: Author's representation of PESTEL by combining PEST with Environment and Legal Factors

Economic activity increases with population growth and has negative implications for sustainable development. Whilst technology can improve efficiencies and productivity it can also be expensive in terms of increasing unemployment. On the contrary the acceleration of technological development is required to maintain sustainable development.

2.5 Industry Environment

The economic structure of an industry and its complexities are the result of long-term societal trends and economic forces. Its effects on the organisation are immediate as it determines the competitive rules and strategies that apply (Internet 11). This section discusses the tools for industry analysis and incorporates two popular models, Porter's Five Forces and Porter's Diamond.

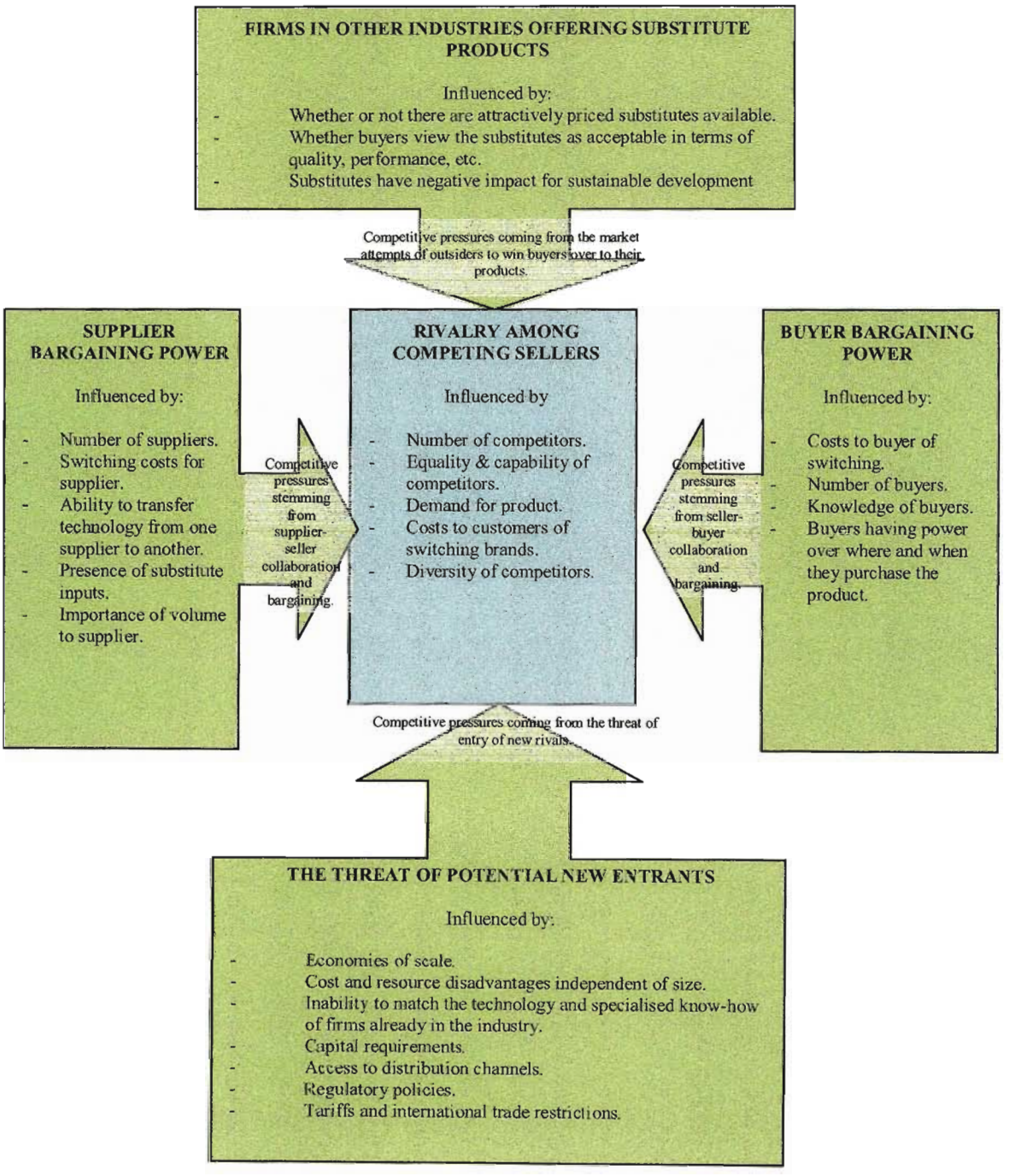
2.5.1 Porter's Five Forces

Michael Porter identified five forces that can be used to assess the structure of any industry (Figure 2.5).

These forces pertain to bargaining power of suppliers, bargaining power of buyers, threat of new entrants, threat of substitutes and rivalry among competitors. They determine the profit potential in an industry and stronger forces are associated with more challenging business

environments. Porter's Five Forces provides a convenient framework for exploring the economic factors that affect the profits and prices of an industry.

Figure 2.5 Porter's Five Force Model



Source: Adapted from Thompson & Strickland, 2001, Crafting & Executing Strategy 12th Edition, McGraw-Hill: 80-92

The model systematically applies economic tools to analyse an industry in depth as to (Internet 12):

- How can it make profits?
- What are the opportunities for success and threats to success?
- It provides a basis for generating strategic choices.

It is applicable to service sectors as well as industrial.

Porter's Five Forces framework is one of the most popular theories that have been used for industry analysis. It is essential because the successful development of a strategy depends on an in-depth analysis of the industry's competitive environment.

When first developed in the early 1980s industries were generally more static and less dynamic. In recent years the framework has been criticised on various levels due to the following reasons: it presents a static and inside-out view of industry, in the global economy industries are without boundaries, it does not consider the macro and micro level factor (Internet 31).

The five forces model is applicable to industrial analysis, Porter has researched and developed the national diamond to analyse the competitiveness of nations.

2.5.2 Analysis of National Competitiveness

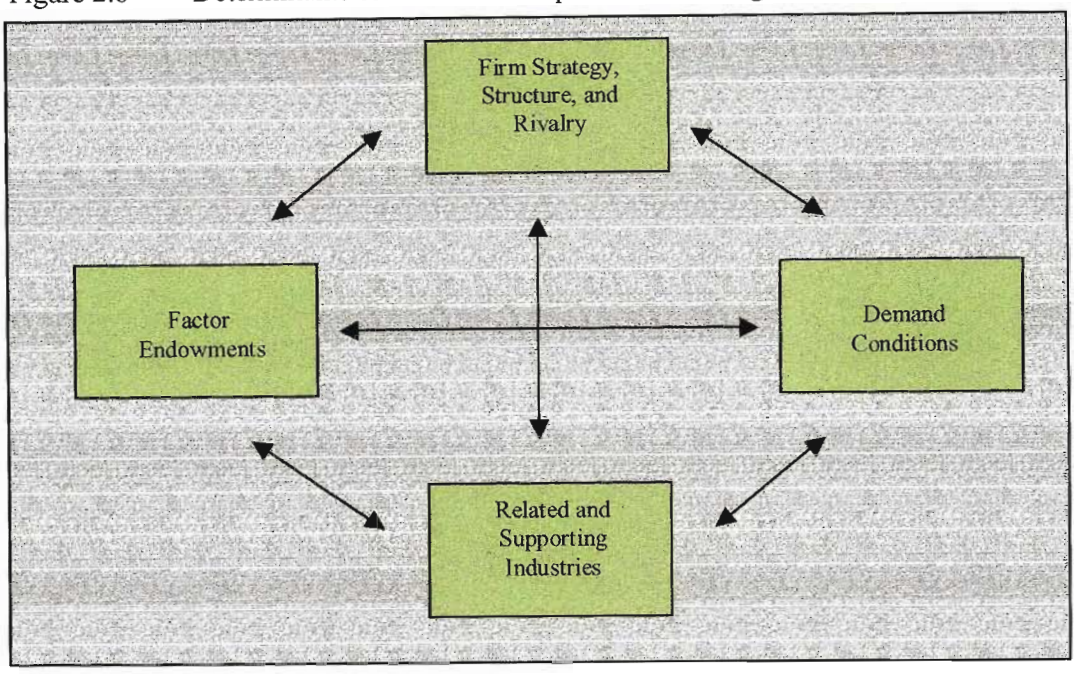
Michael Porter in 1990 in his publication 'The Competitive Advantage of Nations' explained why a nation achieves international success in a particular industry, e.g. Japan in automobiles, Switzerland for precision instruments and pharmaceuticals, and Germany and the US in the chemical industry (Hill, 2003).

Porter theorised that four broad attributes of a nation shape the environment in which local firms compete and these attributes promote or impede the creation of competitive advantage. These attributes are factor endowments, demand conditions, relating and supporting industries and firm strategy, structure, and rivalry (Hollensen, 2001). Porter used a diamond shaped diagram as the basis of a framework to illustrate these attributes of national advantage (Figure 2.6).

2.5.2.1 Factor Endowments

Examples of factor conditions are climate, transport, educational system, technology, and capital.

Figure 2.6 Determinants of National Competitive Advantage: Porter's Diamond



Source: Adapted from (Hill, Charles W. L., 2003, International Business: Competing in the Global Marketplace, 4th Edition, Mcgraw-Hill)

A country creates its own important factors such as skilled labour (factor of production) and technological infrastructure to compete in given industry. Local disadvantages in factors of production encourage innovation and force firms to develop new methods that often lead to a national comparative advantage.

2.5.2.2 Demand Conditions

When the home demand for the industry's product is larger than that in foreign markets, more attention is devoted to that product leading to a competitive advantage when the local firms begin exporting the product. A large home market that become saturated, forces efficient firms to look for new business abroad.

2.5.2.3 Related and Supporting Industries

Successful industries within a country tend to be grouped into clusters of related industries. Clustering has the advantage as it reduces the costs for intermediate goods. The coordination of technology is eased by geographic proximity, e.g. Italy is the world leader in gold and silver jewellery, which can be attributed to the local presence of manufacturers of jewellery making machinery. When local supporting industries are competitive, firms enjoy more cost effective and innovative inputs.

2.5.2.4 Firm Strategy, Structure, and Rivalry

Different nations have different management ideologies that influence competitive advantage, e.g. there is a predominance of engineers in top management at German and Japanese companies where the focus is on improving manufacturing process and product design, and whilst in the US there is a predominance of people from finance background. Local conditions affect the organisation's structural strategy and this helps them to determine the industries in which they will excel, e.g. German industries are hierarchical, which is not so in Japanese industries.

There is a strong association between domestic rivalry and the creation of competitive advantage. Domestic rivalry induces firms to improve efficiency that subsequently makes them better international competitors. In Porters five forces model, low rivalry made an industry attractive. While at a single point in time a firm prefers less rivalry, over the long run more local rivalry is better since it puts pressure on firms to innovate and improve.

2.5.2.5 Government's Role

The role of government in the model is to encourage companies to raise their performance, e.g. by enforcing strict product standards, stimulate early demand for advanced products, focus on specialised factor creation and stimulate local rivalry by limiting direct cooperation and enforcing antitrust regulations (Internet 13).

2.5.3 Life Cycle Analysis (LCA)

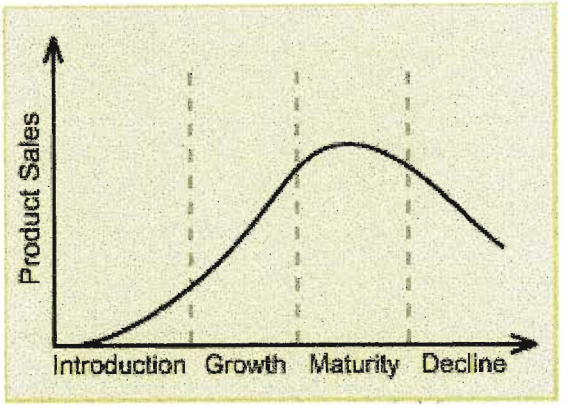
A life cycle analysis assesses whether a strategy is likely to be appropriate given the stage of the product life cycle (Johnson and Scholes, 2002). The analysis assists a firm to select the appropriate theory given the competitive conditions and the stage of the lifecycle.

LCA is a tool that can also aid organisations to improve their environmental performance and also understand environmental impacts associated with their products, processes and activities. Manufacturers and service organisations as a way of opening new perspectives and expanding the debate over environmentally sound products and processes have adopted the principles behind LCA thinking. The goal of LCA is to provide inputs to a broader strategic planning process (Internet 14).

In the introduction stage, the product is introduced to the market through focused marketing efforts to promote maximum awareness. Many trial or impulse purchases will occur at this

stage. The consumer interest in the product will bring about the growth stage, which is distinguished by increasing sales volumes and entry of competitors (Figure 2.7).

Figure 2.7 Life Cycle Model



Source: Product Life Cycle (Online), Available at: http://www.quickmba.com/marketing/product/lifecycle/

When the product reaches the maturity stage competitors begin to leave the market, sales velocity is reduced, and sales volume reaches a steady state. The continuous decline in sales volume, signals the entry into the decline stage, which is attributed to the effects of competition, unfavourable economic conditions and new fashion trends (Internet 15).

By combining the five forces analysis and the life cycle model it is possible to identify the main driving forces of an industry i.e. "the major underlying causes of changing industry and competitive conditions" (Thompson & Strickland 2003). Driving forces can include the Internet and e-commerce, increasing globalisation, technological changes, regulatory influences and government policy changes, changing societal concerns, attitudes and lifestyle. A firm needs to understand the driving forces to be able to anticipate and meet future challenges.

2.6 Competitor Environment

In the competitor analysis, the organisation seeks to understand what drives the competition, as shown by its future objectives; what the competitor is doing and can do, as is revealed by its current strategy; what the competitor believes about itself and the industry, as shown by its assumptions; and what the competitor's capabilities are, as shown by its capabilities (Hanson & Dowling 2001).

When formulating business strategy, the strategies of the firm's competitors must be considered (Internet 16). In concentrated industries competitor analysis forms a vital part of

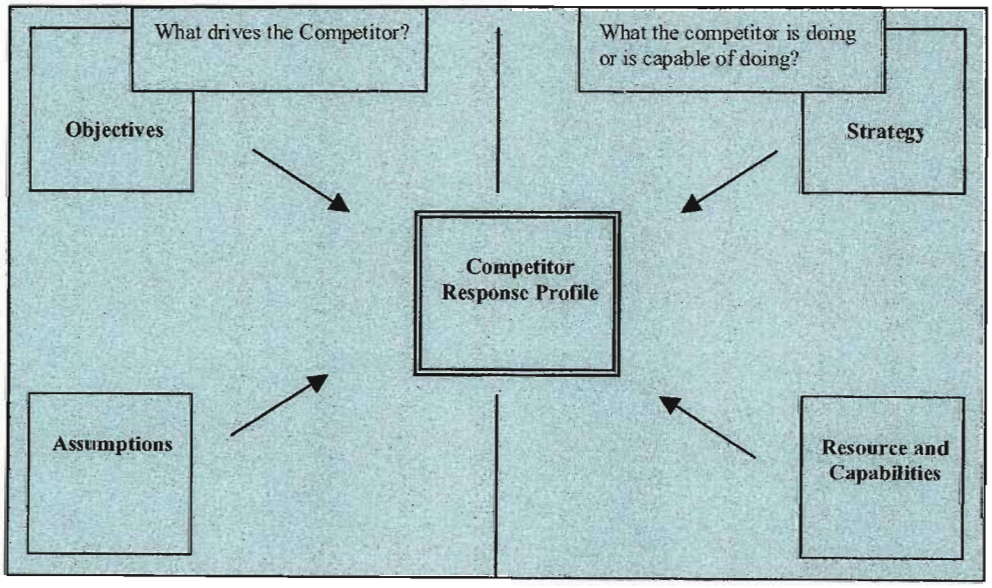
strategic planning. Competitor analysis focuses on two primary activities, (1) obtaining information about important competitors, and (2) using that information to predict competitor behaviour. The aim of competitor analysis is to understand the following:

- With which competitors to compete
- The competitor's strategies and their planned actions,
- How competitors might react to a firms actions,
- How to influence competitor behaviour to the firm's advantage

Michael Porter (1980) presented a framework to analyse competitors based on the following four aspects: competitor's objective, competitor's assumptions, competitor's strategy and competitor's capabilities.

Objectives and assumptions are what drive the competitor, and strategy and capabilities are what the competitor is doing or is capable of doing. Knowledge of a competitor's objective facilitates a better reaction to different competitive moves. The assumptions held about a competitor will help to define their moves. If a competitor's strategy is known, how will it react to competitive attacks and does it have the resources and capabilities to do so (Figure 2.8).

Figure 2.8 Competitor Analysis Components



Source: Adapted from Michael E. Porter, 1980, Competitive Strategy: 49, (online) Available at http://www.netmba.com/strategy/competitor-analysis/

The result of the competitor analysis should be an improved ability to predict the behaviour of competitors and influence it to the firm's advantage.

2.6.1 Gap Analysis

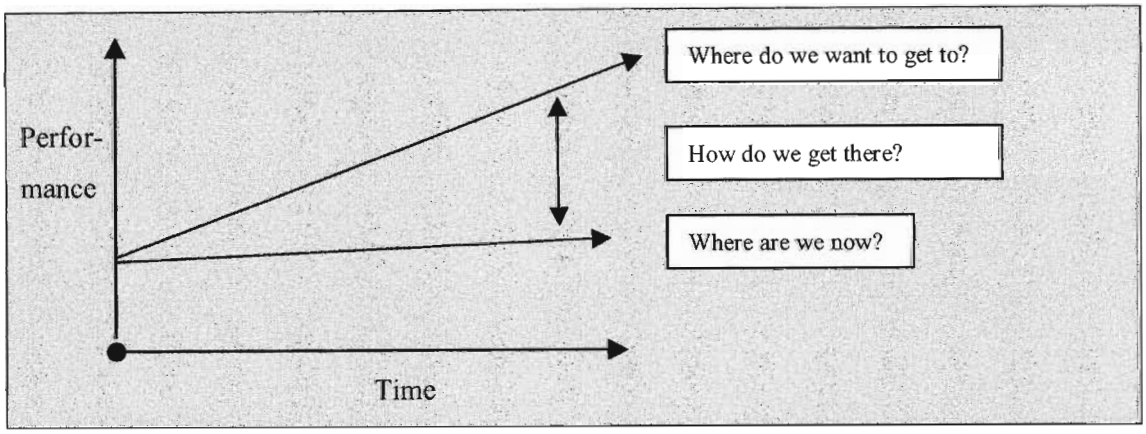
"Gap analysis can help the manager better understand the dynamics of the competitive environment. Importantly, it can be used to reveal where an organisation has weaknesses and where it has strengths" (Billsberry 1998: 219). The more common use of gap analysis is to recognise that there is a gap and to develop strategies to close it.

The type of gap that is normally identified is a performance gap, which centres around three questions (Figure 2.9):

- Where are we now? (Forecast)
- Where do we want to go (Objective)
- How do we get there? (Gap)

When a gap has been identified a manager can choose to redefine the objectives, do nothing or change the strategy.

Figure 2.9 Gap Analyses



Source: Adapted from Ambrosini V, 1998, Exploring Techniques of Analysis and Evaluation in Strategic Management, 1, Prentice Hall

2.6 Internal Environment

The internal environment consists of the inherent competencies of the firm and the structure of its internal systems and processes. It is imperative for the organisation to conduct an internal analysis to obtain a clear picture regarding its strengths and weaknesses. The internal analysis is a comprehensive evaluation of the internal environment's potential strengths and weaknesses. The areas to be evaluated include amongst others; company culture, image, structure, human resources, access to natural resources, operational efficiency, operational capacity, market share, financial resources and trade secrets (Internet 17). The organisation must devise suitable strategies to leverage its strengths and overcome its weaknesses. A SWOT analysis is a simple framework for generating strategic alternatives.

2.7.1 SWOT Analysis

SWOT stands for Strengths, Weakness, Opportunities and Threats. Strengths and Weakness are internal to the organisation e.g. resources such as human capital, internal processes. Opportunities and threats exist outside the organisation e.g. competitor moves, government legislation, and technological advances.

SWOT analysis is "based on the assumption that an effective strategy derives from a sound "fit" between a firm's internal resources (strengths and weaknesses) and its external situation (opportunities and threats). A good fit maximises a firm's strengths and opportunities and minimises its weaknesses and threats" (Pearce & Robinson 2003: 134).

Pearce and Robinson (2003) identify three ingredients that are critical to the success of a strategy. The strategy must be consistent with conditions in the competitive environment. Specifically it must take advantage of existing or projected opportunities and minimise the impact of major threats. The pursuance of market opportunities must not just be based on external opportunities but also on a company's competitive advantages. Finally, the strategy must be carefully executed. External analysis focuses on the first ingredient whilst the internal environment focuses on the second.

2.7.2 Impact Analysis

When carrying out an impact analysis a table is drawn in which opportunities and threats are listed horizontally, e.g. entrance of new technology, increasing globalisation. The strengths and weaknesses are listed vertically in a table. A scoring mechanism is applied where positive, negative or zero scores are assigned to each combination of factors, which results in the formation of a matrix (Jacobs, Shepard & Johnson 1998). A positive (+) score denotes strength a company has which will enable it take advantage of opportunities presented or counteracts a change in the external environment. On the contrary a negative (-) score denotes that strength might be weakened by a change in the external environment or a weakness will further deteriorate. A zero score (0) indicates that no effect is anticipated. Scores are added vertically with a negative score indicating that the company is in a poor position to face the future changes and vice versa. The horizontally sum indicates whether strengths remain strengths or become weaknesses under different external conditions. This is an exhaustive exercise but it provides good insight of environmental impacts on an organisation's current strengths and weaknesses.

2.7.3.Core Competencies

Core competencies are specialised skills that an organisation possesses that have been built over a long period of time. These are usually difficult for the competitor to copy and normally accessed through the formation of joint ventures and acquisition. Empowering staff, investing in training and development and hiring external experts, may also develop core competence.

The company Honda developed core competencies in the manufacturing of engines. Their core products are engines and their businesses are cars, motorcycles, powerboats and lawnmowers (Arbee, 2001). Honda is indeed a very successful company, which can be attributed to its core competency.

The SWOT analysis can also facilitate the identification of a company's competencies e.g. identification of internal capabilities and strengths that are unique. Company competencies may be general not necessarily unique to that company depending on how customers perceive them and in the long run they can become a core competence.

Prahalad & Hamel in "The Core Competence of the Corporation" (1990: 84) point out, "Few companies are likely to build world leadership in more than five or six fundamental competencies". Core competencies tend to be more unique and may give a company competitive edge over its rivals.

2.7.4 Review of Company's Strategic Intent

Once the company has a clear idea of its environments and having identified the strengths and weaknesses it possesses and the opportunities and threats open to it, the next step would be the review its strategic intent.

Prahalad & Hamel (1990: 62-75) define strategic intent as "an ambitious and compelling ... dream that energises ... that provides the emotional and intellectual energy for the journey ... to the future". Strategic intent outlines what the company is trying to achieve in the long term and is synonymous with the vision of an organisation.

In the article Strategic Intent (2004), the following three attributes of strategic intent were provided: direction, discovery and destiny (Internet 18).

- Sense of Direction: "Strategic intent (...) implies a particular point of view about the long term market or competitive position that a firm hopes to build over the coming decade or so". This is a view of the future that conveys a sense of direction.

- Sense of Discovery: "A strategic intent is differentiated; it implies a competitively unique point of view about the future. It holds out to employee promise of exploring new competitive territory".
- Sense of Destiny: "Strategic intent has an emotional edge to it; it is goal that employees perceive as inherently worthwhile".

A typical strategic intent process consists of three important steps:

- Setting the strategic intent: This has all of the three characteristics stated above e.g. the strategic intent of Company X would be to beat company Y.
- Setting the challenge: the appropriate challenge has to be found and communicated to the entire workforce. These challenges are the means to get into the strategic intent, e.g. engineer a product at a target price of R15/kg.
- Empowerment of the strategic intent: This needs to involve everybody. The communication style must be an upward one with new ideas streaming in from the entire organisation.

Strategic intent is an active management process that focuses the entire organisation on the essence of winning. It helps to set targets that deserve personal commitment and effort. Although it is stable over time, goals need to be realistic and targets must be supported by motivation (Internet 19).

2.7.5 Business Vision and Mission Statement

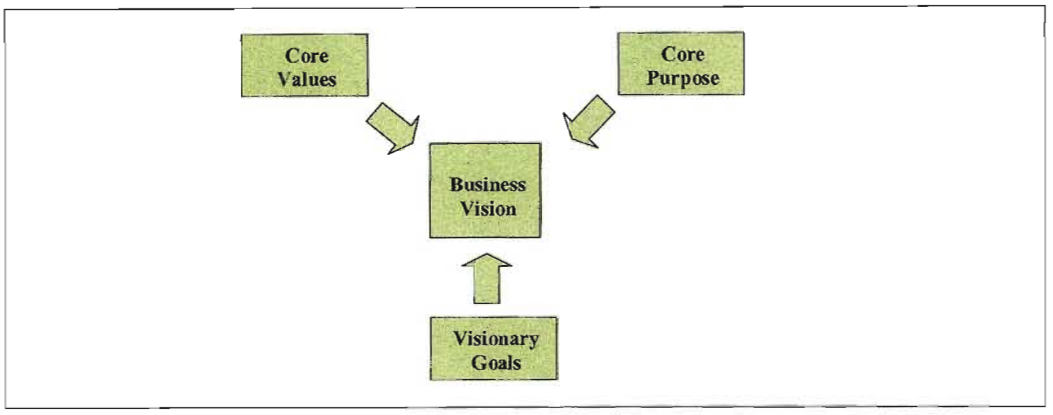
"While a business must continually adapt to its competitive environment, there are certain core ideals that remain relatively steady and provide guidance in the process of strategic decision making. These unchanging ideals form the business vision and are expressed in the company mission statement" (Internet 20).

The mission statement communicates the firm's core ideology and visionary goals, generally consisting of three components: core values, core purpose, and visionary goals (Figure 2.10).

The core values are central to the organisation and reflect the deeply held values, which are independent of the environment. The core purpose is the reason that the firm exists and is normally expressed in the mission statement. The visionary goal is the objective that the organisation wants to pursue in the future which is normally long term.

The three components of the business vision are portrayed in Figure 2.10.

Figure 2.10 Components of the Business Vision



Origin: Adapted from The Business Vision and Company Mission Statement, 2004 (Online), available at http://www.quickmba.com/strategy/vision/

A company's mission statement is its reason for being and it also forms part of the elements of a strategic vision. It conveys a sense of purpose to employees and projects a company image to customers. It also answers questions as "what business the company is presently in?" it conveys the essence of "who we are, what we do, and where we are now" (Thompson and Strickland, 2003:32). Often companies believe that they operate in one business only to discover in time they operate in a different one, e.g. Nokia might think it is a telephone manufacturing company, however business definition analysis shows that it is in the communications business. In the strategy formulation process, the mission statement sets the mood of where the company should go.

2.7.6 Scenario Planning

Scenarios are alternative pictures of potential futures, but the future is just a means to an end. "Herman Kahn, one of the founding innovators of the practice, developed scenarios to see past the cultural blind spot that thermonuclear war must never happen. What if it did happen? Asked Kahn. What sort of world might the survivors face? One dismayed critic, Gerard Piel of Scientific American, coined the phrase "thinking the unthinkable" to describe Kahn's approach, but Kahn gleefully embraced the phrase. Thinking the unthinkable, he argued, was the only way to keep one's strategic vision from getting stale" (Internet 21).

The main aim of scenario planning is to generate an alternative picture of what the future could be, and in this way it is also the basis for testing strategic options. "The use of scenarios, presents scenario planning as a tool that can help managers to audit the environment and, in particular, to envision the long-term future" (Mercer, 1998:99).

In principle scenario planning is always appropriate as all our decisions are affected by the uncertain future. The degree to which the uncertainty affects decisions can vary considerably. Ackof (1997) introduced a concept in what he calls the "futurity" of decisions and he classified them as high futurity and low futurity. A decision on what to eat today is low futurity as it is temporary; on the other hand the decision on which school to select for my son has higher futurity, as this will stay with him for the rest of his life. Decisions with high futurity have to be treated in the light of high uncertainty as they are most important and are usually strategic in nature (Internet 22). Scenario planning helps us to deal with the uncertainty as it reduces the surprise of the future especially in those decisions having a high futurity i.e. our strategic decisions

2.8 Evaluation of Strategies

Whilst many strategic options may have been generated not all of them would be appropriate or even feasible for a firm to implement, thus evaluation needs to take place. Johnson & Scholes (2002:384) consider the following criteria to evaluate strategies, namely, suitability, acceptability and feasibility:

- Suitability is a broad criterion concerned with whether a strategy addresses the circumstances in which an organisation is operating, e.g. the extent to which new strategies would fit with the future trends and changes in the environment, how the strategy might stretch and exploit the core competencies of an organisation.
- Acceptability is concerned with the expected performance outcomes (such as the return or risk) of a strategy and the extent to which these would be in line with expectations.
- Feasibility is concerned with whether a strategy could be made to work in practice. Assessing the feasibility of a strategy requires an emphasis on more detailed practicalities of resourcing and strategic capability

2.8.1 Suitability

The basis of understanding on which strategies can be judged is by assessing the extent to which it (Johnson & Scholes, 2002:356):

- Exploits the opportunities in the environment and avoids the threats,
- Capitalises on the organisation's strengths and core competences and avoids or remedies the weakness and
- Addresses the cultural and political context.

Decision trees, which evaluate future options by progressively eliminating others as additional criteria, can lead to the most suitable option to pursue.

2.8.2 Acceptability

"Acceptability is concerned with the expected performance outcomes, such as risk or return, if a strategy is implemented" (Johnson & Scholes, 2002:370). "The acceptability of a strategy involves consideration of the anticipated rewards relative to the goals of the organisation" (Internet 23). The answers to certain questions will indicate whether or not a strategy is acceptable:

- "What are the expected outcomes of the strategy and are they consistent with stakeholder expectations?
- Do the strategies look attractive in terms of financial returns and the time-scale required for delivery?
- What are the risks involved in following the strategy and how significant are they?"

2.8.2.1 Analysing Return

The profitability analysis concentrates on tangible costs, whilst cost-benefit analysis places monetary value on costs and benefits associated with a strategic option and calls for explicitness. Shareholder value analysis places an emphasis on value management.

Table 2.1 Criteria for Understanding the Acceptability of Strategic Options

Criteria	Used to Understand	Examples	Limitations
Return			
Profitability	Financial return of investments	Return on capital Payback period Discounted cash flow (DCF)	Apply to discrete projects Only tangible costs/benefits Difficulties of quantification Quantification Technical detail often difficult
Cost-benefit	Wider costs/benefits (including intangibles)	Major infrastructure projects	
Real options	Sequence of decisions	Real options analysis	
Shareholder value analysis	Impact of new strategies on shareholder value	Mergers/acquisitions.	
Risk			
Financial ratio projections	Robustness of strategy	Break-even analysis Impact on gearing and liquidity	
Sensitivity analysis	Test assumptions / robustness	'What if?' analysis	Tests factors separately
Stakeholder reactions	Political dimension of strategy	Stakeholder mapping Game theory	Largely qualitative

Source: - Johnson G. & Scholes K., 2002, Exploring Corporate Strategy 6th Edition, Prentice Hall Europe: 390.

2.8.3 Feasibility

Has the organisation got the resources and competences to deliver the strategies?

If a company does not have the necessary resources and competencies the strategy will fail. The analysis of feasibility "frequently leads to an analysis of the tangible resources of the organisation, finance in particular, but a wider consideration of all resources and capabilities should not be ignored" (Internet 25). Tools that can be used to analyse feasibility are:

- Funds flow analysis
- Breakeven analysis
- Resource deployment analysis

A funds flow analysis estimates and evaluates the funds that would be required to support a selected strategy including its source and timing.

The resource deployment analysis surpasses the financial aspects in the funds flow analysis and examines the resources and competencies of the organisation in relation to strategic options.

2.9 Implementation of Strategies

Once the strategies have been identified, evaluated and selected, the next step is implementation, a stage many companies fail to realise. The move from strategy formulation to strategy implementation requires a corresponding shift in responsibilities from strategists to functional managers. Lynch (2000) outlines the basic implementation process in order as being; identification of strategic objectives, formulation of specific plans, resource allocation and budgeting, monitoring and control procedures. Thompson and Strickland (2003) adduce that successful implementation of strategy depends on:

- Strategic leadership.
- The right competencies, capabilities and resources.
- Supportive policies, effective communication and operating systems.
- Continuous improvement.
- Rewards and incentives linked to the achievement of key strategic targets.
- The right organisational structure and culture to fit strategy.

2.9.1 Leadership

"Good management controls complexity; effective leadership produces useful change" (Kotter, 1990:103). Leaders need to have certain characteristics such as: the ability to influence others; self-confidence; integrity and strength amongst other traits.

Complementing these traits leaders need to be both managers and leaders, whilst also being good listeners and have the capacity to tell hard truths when necessary.

True leadership, he reminds us, is an elusive quality, and too often we confuse management duties and personal style with leadership, or even mistake unworthy leaders for the real thing. Yet without leadership, organisations move too slowly, stagnate, and lose their way. In his article titled "What Leaders really do" Kotter (1990) asserts that leadership and management are two distinctive and complimentary systems. The fundamental purpose of management is to keep the current system functioning. Management is about coping with complexity. The fundamental purpose of leadership is to produce useful change, especially non-incremental change. Leadership is about coping with change.

"When managers produce successful change of any significance in organisations, the effort is usually a time-consuming and highly complex eight-step process. Leadership is different from management, and the primary force behind successful change of any significance is the former, not the latter" (Internet 26).

Johnson and Scholes (2002:549) state "leadership is the process of influencing an organisation (or group within an organisation) in its efforts towards achieving an aim or goal".

A leader is not necessarily the person at the top of the organisation and there can be leaders at other levels. The bigger the organisation the more top management has to rely on the cooperation of middle managers to ensure implementation of strategies.

A healthy balance of the management and leadership is needed, for every successful company must balance stability with change to thrive in both the short and the long term.

2.9.2 Supportive Policies

"Policies and procedures help align actions and behaviour with strategy throughout the organisation, placing limits on independent action and channelling individual and group efforts along the intended path" (Thompson & Strickland 2001: 381).

The difference between Policy and Procedure, and quite what goes where, gets a lot of people confused. Procedures follow on from policy, how you do it in practice, and can be a separate document or a section of the same (Internet 27). Has an organisation got all the policies or procedures it needs? The number of policies in an organisation is vast usually covering its entire operations and some examples include health and safety, confidentiality, human

resources, quality, management, legal, financial, and governance. Policies and procedures empower people and enhance effective strategy execution whilst allowing some latitude for personnel as they promote: uniform handling of similar activities, ensure quicker decisions, institutionalise basic aspects of organisation behaviour, reduce uncertainty in repetitive and day-to-day decision making, counteract resistance to or rejection of chosen strategies by organisation members and offer predetermined answers to routine problems (Pearce and Robinson, 2003).

2.9.3 Motivation and Rewards Systems

The motivation of employee is a psychological feature that arouses them to behave in a certain manner to accomplish certain organisational goals. It is imperative for the organisations to enhance the motivation level of its employees in order to bring out the best in them. The reward system management is the framework that envisions formulation of different types of reward systems to boost the motivation of the employees (Internet 28). "The most effective compensation and reward systems align with objective, outcome-focused evaluations of local performance. Each employee's performance measurement must reflect the organisation's business strategies and financial goals" (Internet 29). The compensation awarded should reflect the employee's performance level and his or her contributions to the organisation's success. Management has to be resourceful and design motivational incentives both monetary and non-monetary, e.g. public recognition and praise to motivate employees and bring out the best in them.

2.9.4 Organisational Culture

Every company has a unique organisational culture; its own business philosophy and principles, its own ways of approaching problems and making decisions, its own work climate, its own taboos, and political don'ts, that is, its own ingrained beliefs, behaviour and thought patterns, business practices, and personality that define its corporate culture (Thompson and Strickland, 2003).

Culture is either an important contributor or an obstacle to successful strategy execution. Strong cultures promote good strategy execution when there is a fit and hurt execution when there is little fit.

The organisational culture is its personality and comprises of the assumptions, values, norms and tangible signs (artefacts) of its members and their behaviours. Culture is difficult to express distinctly but it can be sensed, e.g. the culture of a large, profit-making corporation is

different from that of a hospital, which in turn is different from that of a university. The arrangement of furniture, what they brag about, and members dressing are unique to each of these organisations (Internet 30).

Corporate culture can be looked at as a system where inputs include feedback from, society, professions, laws, stories, heroes, values on competition and service. It is a process that is based on assumptions, values and norms, e.g. values on money, time, facilities, space and people. The output of culture is organisational behaviours, technologies, strategies, image, products, services, and appearance. The concept of culture is important, especially when attempting to manage organisation wide change, subsequently practitioners are realising that, despite the best-laid plans, organisational change must include changing structures and processes, as well as the changing corporate culture.

"If the organisation wants to maximise its ability to attain its strategic objectives, it must understand if the prevailing culture supports and drives the actions necessary to achieve its strategic goals" (Internet 32). A cultural assessment can enable the organisation to evaluate the gap between its current and desired culture. The organisational culture must keep pace with the fast changing competitive environment.

The Dutch anthropologist Hofstede classified culture into four dimensions: power distance, individualism /collectivism, masculinity/femininity and uncertainty avoidance (Internet 33).

"Power distance is defined as the extent to which the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally" (Internet 33).

The second dimension Individualism/Collectivism "pertains to societies in which the ties between individuals are loose: everyone is expected to look after himself or herself and his or her immediate family". Collectivism is the opposite and pertains to societies in which people integrated into strong, cohesive in-groups from birth. Masculinity/femininity "pertains to societies in which social gender roles are clearly distinct (i.e. men are supposed to be assertive, tough, and focused on material success whereas women are supposed to be more modest, tender, and concerned with the quality of life); femininity pertains to societies in which social gender roles overlap (i.e. both men and women are supposed be modest, tender, and concerned with the quality of life)". Uncertainty avoidance is the final dimension and is defined as "the extent to which the members of a culture feel threatened by uncertain or

unknown situations". The work of Hofstede can be applied easily to daily intercultural encounters and it reduces the complexities of culture and its interactions into easily understood dimensions.

2.9.5 Best Practices: Total Quality Management (TQM)

TQM is an approach to the art of management that originated in Japanese industry in the 1950's and is becoming popular in the west (Internet 34). Product quality is becoming the cornerstone of global competition; companies are increasingly requiring assurances of standard performance from suppliers. TQM is a broad organisational approach and may be defined as follows (Hollensen, 2001: 437):

- Total: All persons in the firm are involved including customers and suppliers
- Quality: Customer requirements are met precisely
- Management: Senior executives are fully committed

It is a description of the culture, attitude and organisation of a company that aims to provide its customers with products and services that satisfy their needs. This requires quality in all aspects of the company's operations, with things being done right first time, and defects and waste eradicated from operations. TQM surpasses inspection, quality control and quality assurance and is concerned with all aspects of operations performance, particularly how improvement should be managed. It attempts to move the focus of quality away from being a purely operations activity into a major concern for the whole organisation.

TQM can be seen as being concerned with the following (Pycraft, 2000): meeting the needs and expectations of customer; covering all parts of the organisation; including every person in the organisation; examining all costs which are related to quality; getting things 'right first time', designing in quality rather than inspecting it in; developing the systems and procedures which support quality and improvement; developing a continuous process of improvement.

Important aspects of TQM include customer-driven quality, top management leadership and commitment, continuous improvement, elimination of waste, fast response, actions based on facts, employee participation, and a TQM culture (Internet 34). TQM places the customer first and their satisfaction is seen as the company's highest priority. The success of the company depends on customer satisfaction. The TQM Company is sensitive to customer requirements and responds rapidly to them. Each part of the company is involved in Total Quality, operating as a customer to some functions and as a supplier to others.

Continuous improvement is the heart of TQM and once customer satisfaction has been achieved, continuous improvement of product quality is prioritised. TQM also recognises that product quality is the result of process quality, subsequently there is a focus on continuous improvement of the company's processes.

Elimination of waste forms a major component of the continuous improvement approach with emphasis on prevention rather than detection starting from design stage.

This approach helps to prevent errors and achieve defect-free production. Problems that occur within the process are resolved before reaching the next internal customer. Waste elimination supports the principles of sustainable development.

"The very essence of organisational survival and profitable sustainability is embodied in a winning approach to strategy development" (Oosthuizen, 2000:9).

2.10 Sustainable Development

The term sustainable development first came into prominence in the World Conservation Strategy (WCS) published by the World Conservation Union (IUCN) in 1980. It achieved a new status with the publication of Our Common Future, the Brundtland Report, in 1987 and has gained even greater attention since the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in June 1992 (David, 1995).

Sustainable development means different things to different people but the most frequently quoted definition is from the Brundtland Report (Internet 37) where "sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

It focused on improving the quality of life of all earth's citizens without exhausting the use of natural resources beyond the planet's supply capacity. Sustainable development is not a new concept as many cultures over the course of human history have recognised the balanced need between the environment, society and economy.

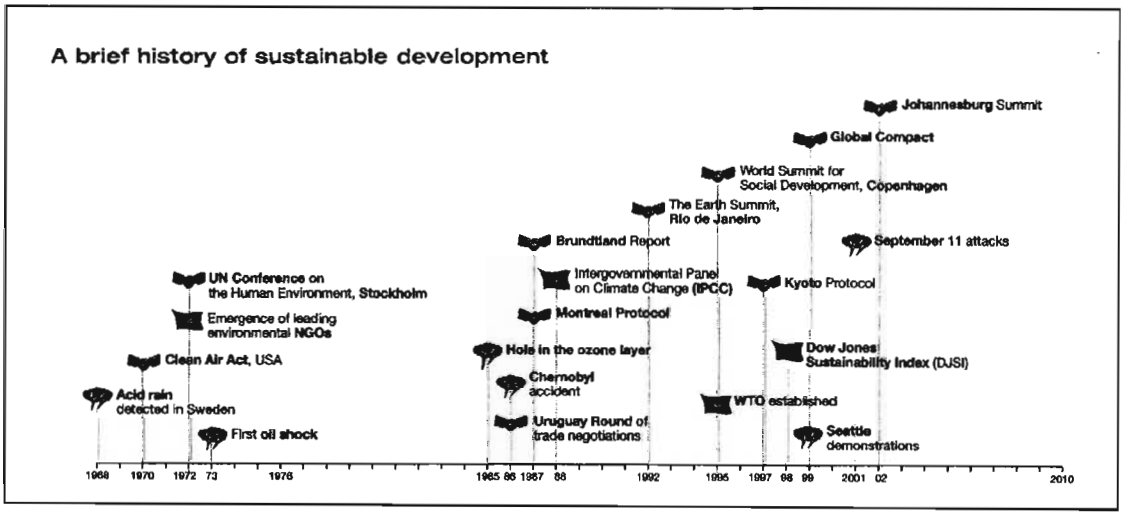
"It is a more global and transversal way of managing that responds to what is expected of an international group like Total: it is visibly and sustainably integrated into our strategy and operations, our responsibilities and our economic, environmental and social commitments, no matter where we are doing business" (Internet 36).

"I meant no harm. I most truly did not.
But I had to grow bigger. So bigger I got.
I biggered my factory. I biggered my roads.
I biggered my wagons. I biggered my loads.
Of the Thneeds I shipped out. I was shipping them forth.
To the South! To the East! To the West! To the North!
I went right on biggering...selling more Thneeds.
And I biggered my money which everyone needs (Carley, 2000:82).

2.10.1 Evolution of Sustainable Development

Sustainable development is a concept that has been evolving for over forty years. There have been major landmarks in the development of global strategies to manage environmental and social issues as described below (Internet 38). Figure 2.11 depicts the brief history of sustainable development and the major landmarks that form part of the discussion from here on.

Figure 2.11 Sustainable Development Time Line



Source: The Paths to Sustainable Development. (2003). [online] Available at http://total.com/static/en/medias/topic103/Total_2003_Paths_to_Sustainable_Development

2.10.1.1 The Stockholm Declaration (1972)

The first major meeting affecting the environment, United Nations Conference on the Human Environment was held in 1972 in Stockholm. It was attended by 113 nations, many of them, developing nations; the organisers made a deliberate effort to put third world concerns on the environmental agenda. The declaration highlighted problems of pollution, destruction of resources, damage to the environment, danger to species and the need to enhance human

social well being. There was a need for countries to improve the living standards of their population and twenty-six principles were stated to ensure that development was sustainable (Internet 35).

2.10.1.2 United Nations Environment Programme (UNEP): 1974

This conference led to the formation of United Nations Environment Programme (UNEP) in 1974 with headquarters in Nairobi, Kenya with responsibilities to focus on environmental policies, guidelines, and actions (Internet 39). The organisation was established to guide and coordinate environmental activities within the United Nation (UN) system. It promoted the international cooperation on environmental issues provided guidance to the UN and encouraged the international scientific community to participate in formulating policy (Internet 40). In 1974, the U.N. General Assembly called for the UNEP, the International Union for Conservation of Nature (IUCN) and Natural Resources now called the World Conservation Union, and the World Wildlife Fund to "develop guidelines to help governments in the management of their living resources through the formulation of a world conservation strategy" (Internet 46).

2.10.1.3 World Conservation Strategy (WCS): 1980

The effort to bring together the issues of environmental protection and development was continued in the World Conservation Strategy (WCS), which appeared in 1980. It was commissioned by (UNEP) which together with the World Wildlife Fund (WWF) provided the financial support for its preparation and contributed to the evolution of its basic themes and structure (Internet 41). Three major priority objectives were defined: to maintain essential ecological processes and life-support systems; to preserve genetic diversity of plants and animals; and to ensure the sustainable utilisation of species and resources (David, 1995). The main aim of the WCS was to integrate conservation and development for the latter to be sustainable.

The actions to be taken by individual countries was based on national strategies and included the four main stages: A review of development plans in the light of the three conservation objectives, and a statement of priorities for conservation; an account of the obstacles to attending to these priorities and a statement of cost effective proposals for surmounting them; a statement of the ecosystems and the species whose conservation should receive high priority, and the preparation of a practical plan of action.

David (1995) further cited that the national strategies should be based on 'strategic principles' as follows; integrate: abandon sectoral approaches and integrate conservation and development; retain options: manage ecosystems in such a way as to safeguard options for utilisation in the future; mix cure and prevention: attend to impending problems which could be worse than current ones; and focus on causes as well as symptoms: prevent the need for conservation by tackling causes of ecological degradation and remedy damage when symptoms become apparent.

2.10.1.4 World Commission on Environment and Development (WCED): 1983

The World Commission on Environment and Development (WCED) was organised in 1983 to work outside the strict UN bureaucracy because UNEP had become the target of much criticism from western nations. Gro Bruntland, the Prime Minister of Norway, headed the Commission. Along with the twenty-five commissioners she travelled widely and held hearings throughout the world and recorded their findings and recommendations in Our Common Future, also known as the Brundtland Report (Internet 42).

2.10.1.5 World Conservation Union (IUCN): 1986

In 1986, the International Conference on Conservation and Development met in Ottawa. The conference report "Conservation and Equity" concluded that (Internet 43): "we need an alternative society, another type of development that is linked with structural transformation". Five broad criteria for the emerging paradigm of sustainable development were identified by the conference: integration of conservation and development; satisfaction of basic human needs; achievement of equity and social justice; provision for social self-determination and cultural diversity and maintenance of ecological integrity.

2.10.1.6 Our Common Future (the Brundtland Report): 1987

A year after the IUCN conference in Ottawa, the WCED published its report, Our Common Future (the Brundtland Report). The UN General Assembly had asked the commission to propose long-term environmental strategies for achieving sustainable development by the year 2000 and beyond and hence formulates a global agenda for change. Our Common Future contained the following list of global requirements: a political system that secures the effective citizen participation in decision-making, an economic system that is able to generate surpluses and technical knowledge on a self-reliant and sustainable basis, a social system that provides for solutions for the tensions arising from disharmonious development, a production system that respects the obligation to preserve the ecological basis for development, a

technological system that can search for new solutions, an international system that fosters sustainable patterns of trade and finance and an administration system that is flexible and has the capacity for self- correction (David,1995).

The report took of from the premise that development and environment were inseparable issues. It was no use in dealing with environmental problems without addressing poverty and inequality, which was seen as both a major cause and a result of environmental degradation. The report placed emphasis on economic growth to eradicate poverty and channel the surplus to remediate environmental problems.

The Commission's overall assessment was that the international economy must speed up world growth while respecting environmental constraints. It did not say how this balancing trick was to be achieved.

2.10.1.7 Caring for the Earth (a strategy for sustainable Living): 1991

In 1991 "Caring for the Earth – A Guide to Sustainable Living", was jointly published by the IUCN, UNEP and the WWF (Internet 47). This document set out a broad global strategy to build a sustainable society and encouraged communities to interpret and adapt these recommendations to local conditions. Irreversible environmental degradation must be prevented, as it reduces the capacity of the planet to support ecological processes. "Caring for the Earth" (1991), has three basic objectives: to maintain essential ecological processes and life support systems; to preserve biological diversity; and to use natural resources and ecosystems sustainably, or, where this is not possible, wisely, as in the case of non-renewable resources such as minerals. The ultimate goal was to create a sustainable society which grows and prospers while living within the carrying capacity of its supporting ecosystems, and which is underpinned by the philosophy of caring for all living creatures. Nine principles were also announced as follows; (1) respect and care for the community of life, (2) improve the quality of human life, (3) conserve the earth's vitality and diversity, (4) minimise the depletion of non renewable resources, and (5) keep within the earth's carrying capacity (6) change personal attitudes and practices, (7) enable communities to care for their own environments, (8) provide a natural framework for integrating development and conservation, and (9) create a global alliance (David, 1995). Principles 2-5 provide the criteria for the successful application of principle 1. The last four principles state the directions to be followed at all levels.

2.10.1.8 Rio Earth Summit: 1992

In 1992, more than 100 countries met in Rio de Janeiro, Brazil for the first international Earth Summit. The meeting addressed the urgent problems of environmental protection, social and economic development. The Rio Declaration is a set of twenty-seven principles agreed to by governments that built upon the declaration adopted at the Stockholm Conference in 1972 (Internet 44). "After two years of preparation, more than 35,000 people, including 106 Heads of State or Government and 9,000 journalists, arrived in Rio de Janeiro for what proved to be a milestone international event" (Internet 45).

A number of important conventions were made as follows: The Convention on Climate Change: limits emissions of the greenhouse gases carbon dioxide and methane. The Convention on Biological Diversity: gives countries responsibility for conserving species diversity and using biological resources in a sustainable way. The Rio Declaration and the Forest Principles sets out the principles of sustainable development and pledged to reduce deforestation, including those on biodiversity and climate change, as well as to Agenda 21, a comprehensive global plan of action for local, national and global sustainable development. The success of the 1992 Summit was most evident in the high level of public awareness and broad engagement it fostered on issues of global environmental protection and the health and wellbeing of future generations. The Rio Summit produced a major plan for sustainable development called Agenda 21. It proposed that giving people access to the resources they need to support themselves could reduce poverty.

2.10.1.9 Agenda 21 - A Plan for Achieving Sustainable Development

Agenda 21 was an action plan that was formulated for the twenty-first century, which stressed the importance of participation of ordinary people, including the poorest, in decisions affecting their welfare and that of their children and their children's children. It included details of both finances and technology transfers required for the implementation, and of institutional arrangements at the UN for overseeing the process.

Agenda 21 is a guide for individuals, businesses and governments in making choices for development that help society and the environment. It is huge document, with 40 chapters in 4 sections that deals with (Internet 48): (1) Social and economic development (Chapters 1-8); this was targeted at developing countries, poverty, consumption patterns, population, health, human settlements, integrating environment and development. (2) The conservation and management of resources for development (Chapters 9-22); here the focus was on

atmosphere, land, forests, deserts, mountains, agriculture, biodiversity, biotechnology, oceans, fresh water, toxic chemicals, hazardous radioactive and solid waste and sewage. (3) Strengthening the role of major groups that are involved in achieving sustainable development (Chapter 23 -32); it concentrated on women, children and youth, indigenous peoples, non-governmental organisations, local authorities, workers, business and industry, farmers, scientists and technologists. (4) Means of implementation (Chapter 33-40) these included finance, technology transfer, science, education, capacity-building, international institutions, legal measures and information (David, 1995; Internet 51).

Chapter 8 of Agenda 21 provides a guide to decision making, a comprehensive plan for action in integrating environment and development in making decisions at the macro, sectoral and project levels. This plan contained four programme areas: integrating environment and development at the policy, planning, and management levels; providing an effective legal and regulatory framework; making effective use of economic instruments and the market, and other incentives; establishing systems for integrated environmental and economic accounting (Markandya, 2002: 35).

2.10.1.10 Towards Sustainability: Late 1992

This was the fifth Environmental Action Programme adopted in late 1992 by the European Community (EC) calling for progress on integrating sustainable development into all areas of policy making. The programme set long-term objectives and focused on a global approach. Two major principles underpin it: first, the integration of the environment element in all major policy areas that is causing environmental deterioration. Secondly, commitment to agreed measures could only be achieved if the command and control approach with shared responsibility amongst the various stakeholders is replaced, e.g. governments, industry and the public. The strategy required a wide range of instruments: legislation to set environmental standards; economic instruments to encourage the production and use of environmentally friendly products and processes; horizontal support measures (information, education, research) and financial support measures (Internet 49).

2.10.1.11 Copenhagen Summit for Social Development: 1995

The World Summit for Social Development was held in March 1995 in Copenhagen, Denmark where governments adopted a declaration and programme of action that represented a new consensus to place people at the heart of development. It was the largest gathering of world leaders attended by 117 heads of State or Government who pledged to make eradication

of poverty, the goal of full employment and the fostering of stable, safe and just societies their overriding objectives. At the summit the world's leaders agreed to ten commitments as follows: (1) to eradicate absolute poverty by a target date to be set by each country, (2) to support full employment as a basic policy goal, (3) to promote social integration based on the enhancement and protection of all human rights, (4) to achieve equality and equity between women and men, (5) to accelerate the development of Africa and the least developed countries, (6) to ensure that structural adjustment programmes include social development goals, (7) to increase resources allocated to social development, (8) to create an economic, political, social, cultural and legal environment that will enable people to achieve social development, (9) to attain universal and equitable access to education and primary health care and (10) to strengthen cooperation for social development through the UN (Internet 50).

2.10.1.12 Kyoto Climate Change Protocol: 1997

In 1997, governments met in Kyoto, Japan to once more look at the problem of global warming. Previous agreements had tried to limit emissions of carbon dioxide to the levels they were in 1990. Many countries had failed to achieve even this small reduction. The UK and Germany met these targets. At Kyoto, a new set of targets for the reduction of greenhouse gases was agreed. By 2012, emissions of six major greenhouse gases must be reduced to below 1990 levels for the target period 2008-2012. Developing countries refused to make any commitments, arguing that they were not the major source of current emissions, as they did not want to slow down their economic growth. The agreement encouraged reduction where they can be achieved at its lowest cost in order to enhance economic activity. The US itself accounted for about one-fifth of the global greenhouse-gas emissions. The Kyoto agreement was not likely to meet its objectives due to the lack of commitment by developing countries and the US (Pugel, 2000).

2.10.1.13 Johannesburg 2002 "Rio+10"

Ten years after the Rio Earth Summit, countries met to review progress towards sustainable development. The conference focused on poverty and the access to safe drinking water and sanitation. It agreed on reaching several aims by 2015, including: to cut by half the 1.1 billion who do not have access to safe drinking water; to cut by half the 2.4 billion people who live with inadequate sanitation, and improve sanitation in institutions, such as schools; and promote safe hygiene; to cut by half the number of people who go hungry; to adopt and implement policies and measures to promote sustainable production and consumption, using the "polluter-pays" principle, to increase corporate, environmental and social responsibility

and accountability, to promote waste prevention and reduction by encouraging production of reusable goods and biodegradable products; to implement programmes against deforestation, erosion, land degradation, loss of biodiversity and disruption of water flows; to increase the use of sustainable energy sources and restore depleted fish stocks (Internet 53). Many environmental groups such Green Peace protested at the lack of progress since the Rio summit in 1992. Politicians pointed out that the summit had moved on from issues like biodiversity and climate change to tackling poverty and poor living conditions.

The development of sustainable development traversed through the periods of the Stockholm Declaration (1972) up to the Johannesburg World Summit in 2002 in which many hallmarks were established. The essence of these thirty years has had a commonality in which the fundament focus on sustainable development was on achieving equilibrium in the environment, economic and social spheres. From here on the discussion will focus on aspects of sustainable development in general, models and indicators and evaluation criteria.

2.10.2 Sustainable Development in General

Sustainability is a discipline, in which the expanse of knowledge is extremely broad with the Internet providing virtually millions of sites on this subject, not forgetting the vast amount of literature that is available from resource centres. This can easily be attributed to its dynamic nature, sensitiveness and the fact that it affects every living entity on this planet. It would be impracticable to cover every iota of information on this field. Selected topic that have a theoretical dimension, which might not necessary have a logical flow will be discussed, debated and literature citations including the internet will be made.

2.10.3 The Challenges of a Sustainable World

In discussing the challenges of a sustainable world the focus is on human rights, economic, and environmental aspects (Internet 54). Human rights challenges focuses on, respect of fundamental principles relating to dignity, respect of working conditions, right to safety and health at work, right to education. Economic challenges are based on demographic growth and husbanding of energy, water and other natural resources, economic disparities between rich and poor countries and the need to apply equitable rules, access to basic services, such as water, electricity and public transportation.

Environmental challenges include limited capacity of the environment (water, air, soil and waste) to absorb pollution generated by increased regional and global industrial activity; risk of ecosystem imbalances and the resultant adverse impact on biodiversity; risk of major local

pollution (oil spills) and diffuse, widespread pollution (compounds toxic to the biosphere and humankind) and managing industrial risks.

2.10.4 Sustainable Development International

"Sustainable Development International exists to provide unique publishing services for business to raise awareness about CSR in practice to influence effective sustainable development policy" (Internet 52). The competitive advantage of Sustainable Development International (SDI) lies in its strategic link between sustainable development policy and CSR practice. The strategic direction of Sustainable Development International is defined by its ability to meet this demand. It provides up-to-date reporting on key sustainable development processes and issues, and focuses on the follow-up, and implementation of, the World Summit on Sustainable Development, and the UN millennium development goals as well as on latest developments from the CSR sector. The key issues for which ongoing coverage is provided are water and sanitation, energy and transport, health and social issues, agriculture and biodiversity, finance and trade, corporate social responsibility and accountability. In addition SDI provides the latest information on current CSR practice vis-à-vis market initiatives, regulation, voluntary codes of conduct, international standards and reporting mechanisms.

2.10.5 Principles of Sustainable Development

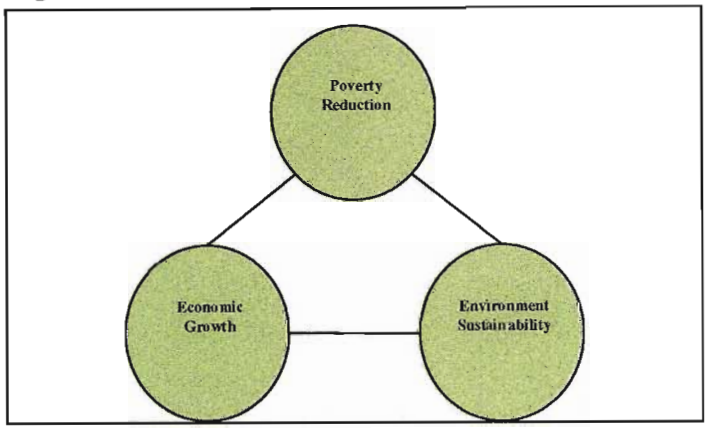
There are four principles of sustainable development as follows (Dommen, 1993:1-3): The Polluter-Pays Principle (PPP): Its purpose is to induce the polluter to bear the expenses of preventing and controlling pollution to ensure that the environment is in an acceptable state. The cost of these measures should be reflected in the cost of goods and services. The User-Pays Principle (UPP): The price of natural resources should reflect the full range of the costs involved in using it, including the costs of the external effects associated with exploiting, transforming and using the resource, together with the costs of future uses foregone. The Precautionary Principle (PP): In order to achieve sustainable development, policies must be based on the Precautionary Principle. Environmental measures must anticipate, prevent and attack the causes of environmental degradation.

The Subsidiary Principle (SP): The essence of this principle is that political decisions should be taken at the lowest possible level. Well rooted in the constitutional practice in countries like Switzerland, it has been absorbed into practice of the European Community. The community shall take action relating to the environment to the extent to which objectives can be attained better at the community level than the level of the individual Member States.

2.10.6 Evaluation Criteria

In search for a theoretical model to evaluate sustainable development, reference is made to countries and organisations that have evaluated their strategies and the criteria and models they utilised. The Pakistan National Conservation Strategy (NCS) is one of the best known, externally admired for its vision and potential at the time it was adopted. It was developed in response to the WCS launched by IUCN in 1980. An extract of its evaluation criteria showing the model it used is presented (Internet 55). In order to assess the achievement of the stated objectives of its national conservation strategy, three types of outcomes and the linkages between them were used: (1) economic growth; (2) poverty reduction and social development; and (3) environmental sustainability (Figure 2.12).

Figure 2.12 Critical Triangle of Development Outcomes



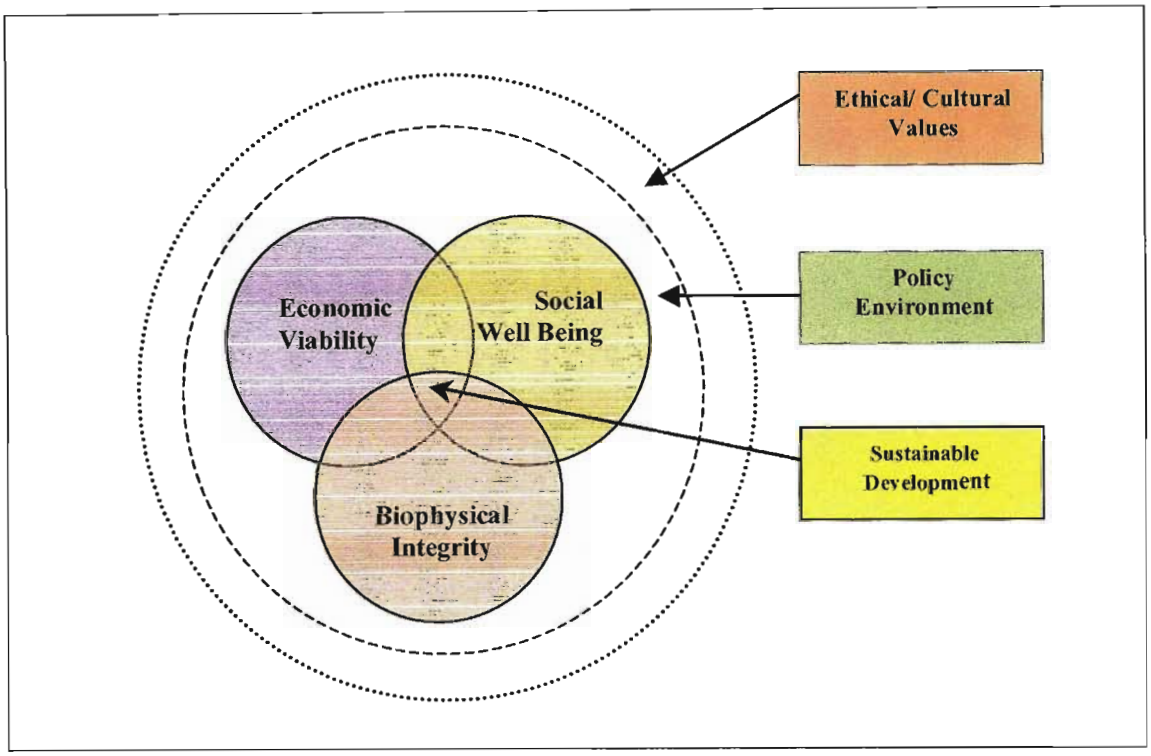
Source: Adapted from Hanson A. J., (2000), The NCS Review. [Online] Available at http://www.nssd.net/country/pakistan/pamtr2c2.htm

Other forms of assessment were also used, which included qualitative, focus group meetings, impressions from site visits, expert opinion. A review of the processes and systems intended to communicate and implement the NCS was based on analysis derived from interviews inside and outside of government. Preparation of background studies and assessments: These covered a range of stakeholder consultations and crosscutting issues. Desk studies: information was collected from studies, reports, books and articles related to the sectors covered under NCS. Field visits: visits to provinces and territories to investigate the state of provincial conservation strategies and to visit selected projects, with interviews to collect detailed information and evaluations. Validation workshop: participants shared initial findings and recommendations stakeholder feedback was obtained.

The Integrated Development Planning and Local Agenda 21 used figure 2.13 to assess sustainable development in South Africa. The Department of Environmental Affairs and Tourism describe sustainable development as "the process of continuously striving for

dynamic balance between: using and protecting the physical and natural environment and its resources; creating equitable and viable economic systems with an ethical basis; and acknowledging and guiding social and cultural systems and values towards greater equitability responsibility and human well being". The aim was to seek local solutions to improve the quality of life of all South Africans.

Figure 2.13 Integration of Economic, Social and Environment factors



Source: Adapted from Coetzee M, 2002, Local Pathway to Sustainable Development, CSIR

In terms of the National Environment Management Act sustainable development was defined as "the integration of social, economic, and environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations" (Coetzee, 2002: 2).

2.10.7 Indicators for Sustainable Development (van den Bergh, 1996:90)

Just as cloud cover is used as an indicator to decide whether to take an umbrella to work or not, a patient's temperature is used as an indicator to determine illness; similarly there are indicators for sustainable development. Good indicators may be identified on the basis of their adequate representation of complex processes combined with effectiveness in aiding decision making, for example, the purpose of their use may be: planning: problem

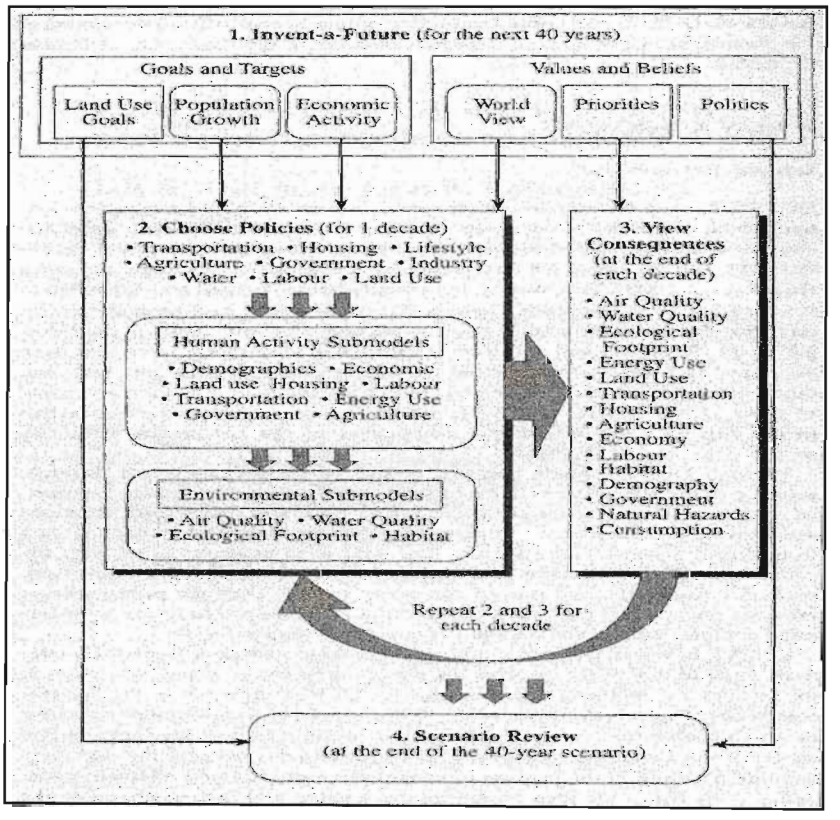
identification, allocation of socioeconomic resources, policy assessment; or communication: notification (warning), mobilisation, legitimisation of policy measures.

The features of good indicators are:

- They must be representative for the chosen system and have a scientific basis.
- They must be quantifiable.
- They must represent reversible and manageable process.
- They should clearly represent the cause and effect chain.
- They should offer implications for policy.

There has been a big push to develop indicators reflecting, not just environmental, but also social and economic, aspects of sustainable development. These are important for assessing the current situation and for future monitoring. QUEST is a microcomputer based scenario generation and evaluation system (Figure 2.14) that is intended to encourage thinking about sustainability in a regional context (Abaza and Baranzini, 2002).

Figure 2.14 Conceptual framework of QUEST



Source: Abaza H and Baranzini A, 2002, Implementing Sustainable Development, Edward Elgar Publishing Limited: 184

The user 'invents a future', sketches a general picture of a desired or expected future by providing information about their values and beliefs and how the world works and setting the broad outline of the scenario to be explored. QUEST interpolates and creates the population and economic growth paths to reach these goals. The user adds flesh to this skeleton by choosing policies to develop the full scenario.

This model reports on ecological, economic, and social consequences of the users decisions and provides feedback to the user during the process of scenario generation. QUEST allows for a sequential decision making process where the user sees consequences and can change policies in a stepwise manner. The principal goal of QUEST is to make ecological, social and economic indicators interactive and dynamic and places them in a framework that gives the user full control of the situation.

"Even though the air is thick with talk of paradigm shifts and predictions of new global post-industrial civilisation, we seem unable – or afraid – to grasp the truth of how the world has changed, or what it means to govern. Evolution no longer follows the Darwinian rules. That vision is as obsolete as its first cousin, Newton's clockwork cosmos. Today the driving force in evolution is human intelligence. The world has changed; and the human species, which has wrought the change, is now being required to change its response to the conditions we have created. The change calls for a massive reappraisal of basic ideas. We are talking about a transition in the evolution of the planet itself" (Carley, 2000:34).

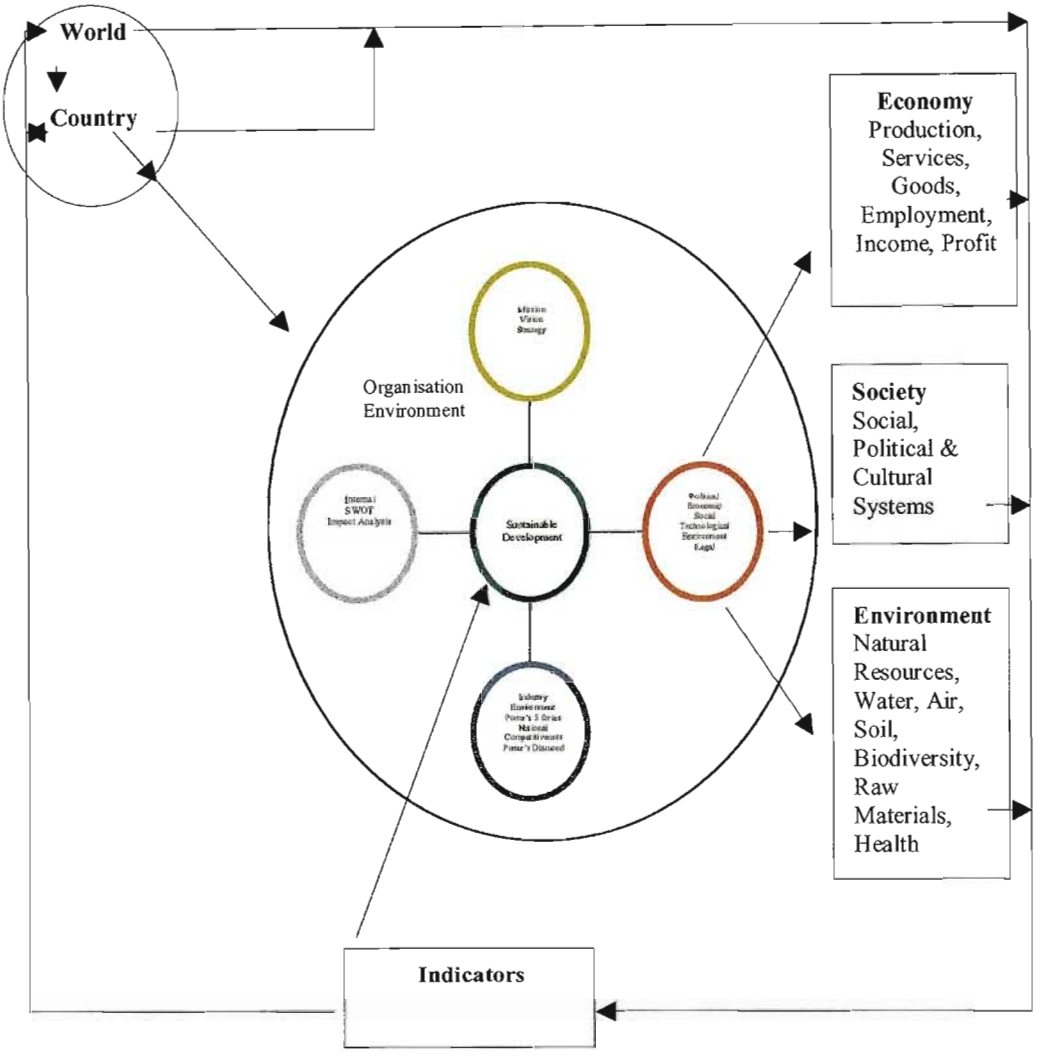
2.11 Model to be used for Evaluation in Chapter 4

The model developed during this chapter is shown overleaf in figure 2.15 reflecting the focus areas and is included in the case study, and taken into consideration in the evaluation of Total's business and sustainable development strategies. The model is based on the following:

Companies exist to make a profit through the deployment of resources and therefore contribute to the GDP and ultimately economic growth. They are governed by national and international regulations and requirements, which diminish their profits, and consequently they have to contend with a balancing act of meeting their objectives, which is to maximise profit, and meeting the requirements of sustainable development. Can Total be profitable and simultaneously dedicate investments to social and environmental concerns? The model shows the link between strategy and sustainable development. Three macro environment elements, namely economic, environmental and social used in strategic management are the major

appendages of the sustainable development models depicted in figures 2.12 and 2.13. The company is part of country and intern part of the globe. The organisation has a mission and a vision that is supported by its strategies. The model shows the link between a company's strategy and sustainable development.

Figure 2.15 Linking Strategy to Sustainable Development



2.13 Conclusion

This chapter presented the theories relating to sustainable development and strategic planning. The theory of strategic management was discussed briefly, touching on the definition of strategy, macro-environment, industry-environment, analytical tools, scenario planning, with attention given to Johnson's and Scholes evaluation technique which tests the suitability, acceptability and feasibility of the selected strategies.

Leadership, policies, reward systems, and corporate culture, which contribute to successful strategy development, were also discussed to a lesser extent. This was followed by discussion on TQM. A company has to take cognisance of these and make the necessary changes to facilitate successful implementation, which is often the most difficult part of the process.

The World Conservation Strategy, IUCN, definition of sustainable development, the Rio Summit, the Brundtland Report, Agenda 21 designed for the 21st century, analytical methods and evaluation formed part of the initial discussion. Aspects that contributed directly to sustainable development were highlighted

In chapter three the case study on Total is presented from which strategy and sustainable development information will be harnessed to form part of the evaluation in chapter four.

CHAPTER 3: Case Study -
Total "We are there for you"

3.1 Introduction

This chapter discusses the case study of Total an international petroleum company initially from a global perspective and then ventures into the South African operations to some extent. Many aspects of the company are presented whilst the key focus is on sustainable development. The information sourced for this chapter hails largely from Total's websites (Total.com and Total.co.za for the South African section) and where this differs referencing will done accordingly.

3.2 History

The company was founded in 1924 under the name of Compagnie Française des Pétroles (CFP). On June 21, 1985 its name was changed to Total - Compagnie Française des Pétroles (Total-CFP). The company officially changed its name to Total on June 26, 1991. Ernest Mercier was the first president of the CFP from 1924 to 1940. The new Total was created through two successive mergers, the first when the former Total joined with Belgian oil company Petrofina to form Totalfina, and the second when Totalfina combined with French Oil Company Elf Aquitaine to create Totalfinaelf. The name has once more changed and Totalfinaelf has been replaced by Total.

3.3 Operations

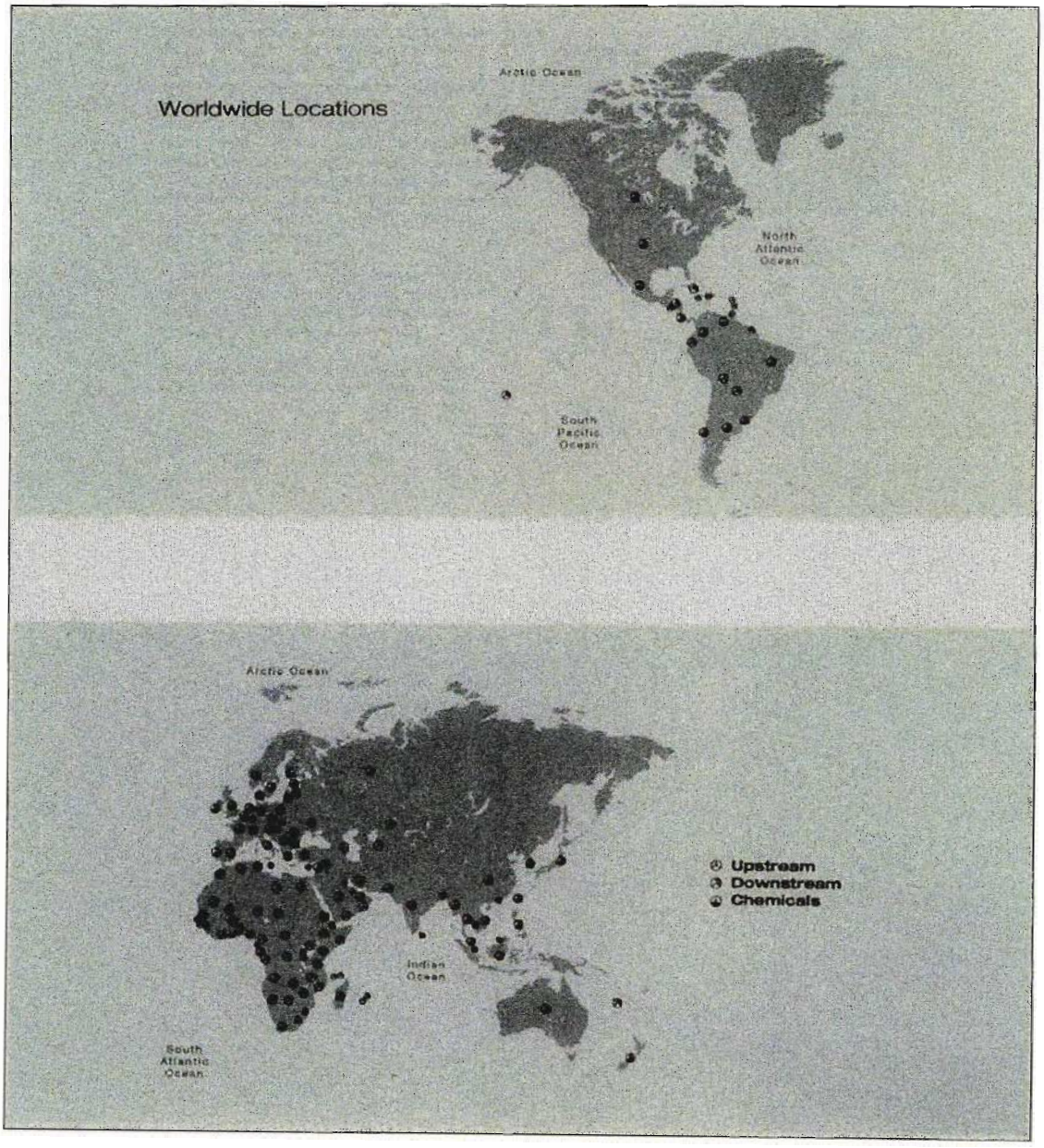
Total is a world-class petroleum and chemicals Group carrying on numerous industrial and commercial activities in the petroleum, gas, electricity, renewable energy and chemicals sectors. It is active in more than one hundred countries and resulting from its merger with PetroFina and Elf Aquitaine, the company based its development on shared core values. The Group's worldwide (Figure 3.1) operations are conducted through three business segments (Internet 4):

- Upstream
- Downstream
- Chemicals

The Upstream segment includes exploration, development and production activities, as well as the Group's coal and gas and power operations. The Downstream segment sells

substantially all of the crude oil produced by the Group, purchases most of the crude oil required to supply the Group's refineries, operates refineries and markets petroleum products worldwide through both retail and non-retail activities, and conducts the Group's bulk trading.

Figure 3.1 Total Worldwide Locations



Source: Corporate Social Responsibility Report 2003 Introduction [online] Available at http://www.total.com/static/en/medias/topic323/Total_2003_CSR_0intro_en.pdf

The Chemicals segment includes base chemicals and polymers, which are linked to the Group's refining activities, intermediates and performance polymers, as well as specialties, which include rubber processing, resins, adhesives and electroplating.

3.4 Management Committee

The Group is managed by the Executive Committee (COMEX) and the Management Committee (CODIR). The Executive Committee is the Group's primary decision-making body in matters of overall strategy and has investment authority. It also prepares decisions for submission to the Group's Board of Directors. The Management Committee facilitates coordination among the various Group units, monitors the results of the operational divisions and reviews the reports of the functional divisions.

3.5 Mission

Total is a multinational energy company committed to leveraging innovation and initiative to provide a sustainable response to humankind's energy requirements. In addition to conducting its business according to the highest standards of professional behaviour, it maintains an ongoing commitment to transparency, dialogue and respect for others. It is strategically dedicated to meeting the challenges faced by all of its businesses when developing natural resources, protecting the environment, integrating its operations into host country cultures, and dialoguing with civil society.

3.6 Values

Total is dedicated to setting the benchmark not only for business and financial performance, but also for compliance with the most demanding standards of corporate social responsibility. Accordingly, it continuously develops a proactive ethical process to support the ability of all internal and external stakeholders to express its values, which are:

- Professionalism.
- Respect for employees.
- Ongoing concern with safety and environmental protection.
- Contributing to the development of host communities.

3.7 Strategy

Total was one of the world's fastest-growing and best-performing oil companies in 2003. This growth is being supported by a clearly defined strategy and a determination to

continuously improve performance while respecting its commitment to corporate social responsibility.

3.7.1 Strategic Priorities

The Company's strategy is to grow exploration and production activities, including reinforcing its position as one of the leaders in the worldwide natural gas and LNG market. In Downstream, the strategy is to consolidate its market position in Europe, while developing its interests in high-growth markets (such as the Mediterranean Basin, Africa and Asia). In Chemicals, it is to rationalise by giving priority to improving profitability and expanding base chemicals operations and by creating a new decentralised entity including vinyl products, industrial chemicals and performance products, destined to become a competitive and independent player.

3.8 Industry Environment

A complex supply chain incorporating many aspects of production characterises the industry. Exploration, extraction, refining, distribution, marketing, and sales are the major elements of this chain. World oil reserves are limited and this is impacting on the overall supply of petroleum. This has led to a series of mergers and acquisitions between a number of the leading industry players with the result that there is now a new core of larger but fewer major private international companies that lead the petroleum industry. The world top eight major petroleum companies ranked in order on six criteria at the end of 2003 by Petroleum Intelligence Weekly are Saudi Aramco, ExxonMobil, National Iranian Oil Company, Petroleos de Venezuela, BP Amoco, Royal Dutch Shell, Chevron Texaco and Total (Internet 57). Mergers have taken place between Exxon and Mobil, BP which is now the combination of British Petroleum, Amoco, Arco and Burmah Castrol, Chevron and Texaco have merged recently and Total which merged with Fina and Elf. Of these only Shell has not acquired or merged over the last couple of years. The mergers have allowed the largest companies in the industry to control many, or all, aspects of the supply chain. The mergers are a way to bring many of the small, niche competitors together, in order to produce a larger corporation capable of handling all aspects of production (Internet 62).

Many petroleum products are global commodities and are widely traded on the worldwide commodity and futures markets. While many products are fungible (products from different manufacturers can be used interchangeably) logistics may minimise shipping over long distances. In many cases manufacturers in widely separated locations simply trade products

between each other on paper, and physical delivery is made by the nearest manufacturing facility regardless of which company is the owner.

3.9 Political and Legal Environment

Total's teams sometimes face environments or situations that are very challenging for the host population, such as political instability, lack of democracy, internal divisions and war. As a result of being an international company, it is confronted by a variety of complex issues, such as ensuring that its values are respected in countries that are not democracies and achieving this without imposing a cultural model perceived as deeply alien to local principles.

The Organisation of Petroleum Exporting Countries (OPEC) affects the global supply structures instituting production limits and pricing regulation to establish market equilibrium between supply and demand. OPEC has a powerful influence over the industry with its members meeting nearly half of the world's export requirements. They have the power to drive change and maintain stability by influencing the other half of the non-OPEC members. The OPEC member countries coordinate oil production policies to stabilise the market and achieve a reasonable rate of return on their investments. Decisions about matching oil production to expected demand are taken at the meeting of the OPEC conference, the details of which are communicated in the form of OPEC press releases (Internet 58). There are regulatory laws and clauses on petroleum refining, drilling, and production promulgated by international and local bodies that are specific to the Petroleum industry e.g. EPA (Environmental Protection Agency) which is regulates the international level of sulphur content in diesel fuel, EU and NAFTA.

3.10 Economic Environment

The economic environment represents the economic conditions in the country where the organisation operates. Factors include economic development, infrastructure, resource and product markets, exchange rates, inflation, interest rates and economic growth. This also includes transportation facilities such as airports, highways, railroads, energy-producing facilities such as utilities and power plants, and communication facilities such as telephone lines and radio stations. The European and American markets are deregulated. There have been talks of deregulation in South Africa. In South Africa the fuel industry is privatised.

There is an increased emphasis on gas. For some time now gas consumption and production has been growing faster than that of oil, especially in the face of rising environmental

concerns. There is deepwater exploration and development, especially in the Gulf of Mexico and Angola. There are a range of opportunities for investment in oil and gas developments in newly opening areas including the Caspian and the Middle East. The economics of supply and demand of products affects all global petroleum companies.

The world has become progressively more open, globalised with few barriers, transparent, with wide availability of low cost information, and forces of competition are strong. The petroleum industry was arguably the first global industry more than a century ago.

3.11 Social and Environmental Factors

Hydrogen sulphide is a highly toxic compound present in some natural gas deposits that is released into the air during the refining process. It has a strong odour and continuous exposure causes ill health. Epidemiological studies have suggested that petroleum and natural gas workers are at elevated risk for certain types of cancer, including cancers affecting the intestinal tract, brain, skin, leukaemia, testis, and multiple myeloma. This information is the result of growing research by scientists, especially those sponsored by environmentalist organisations (Internet 60).

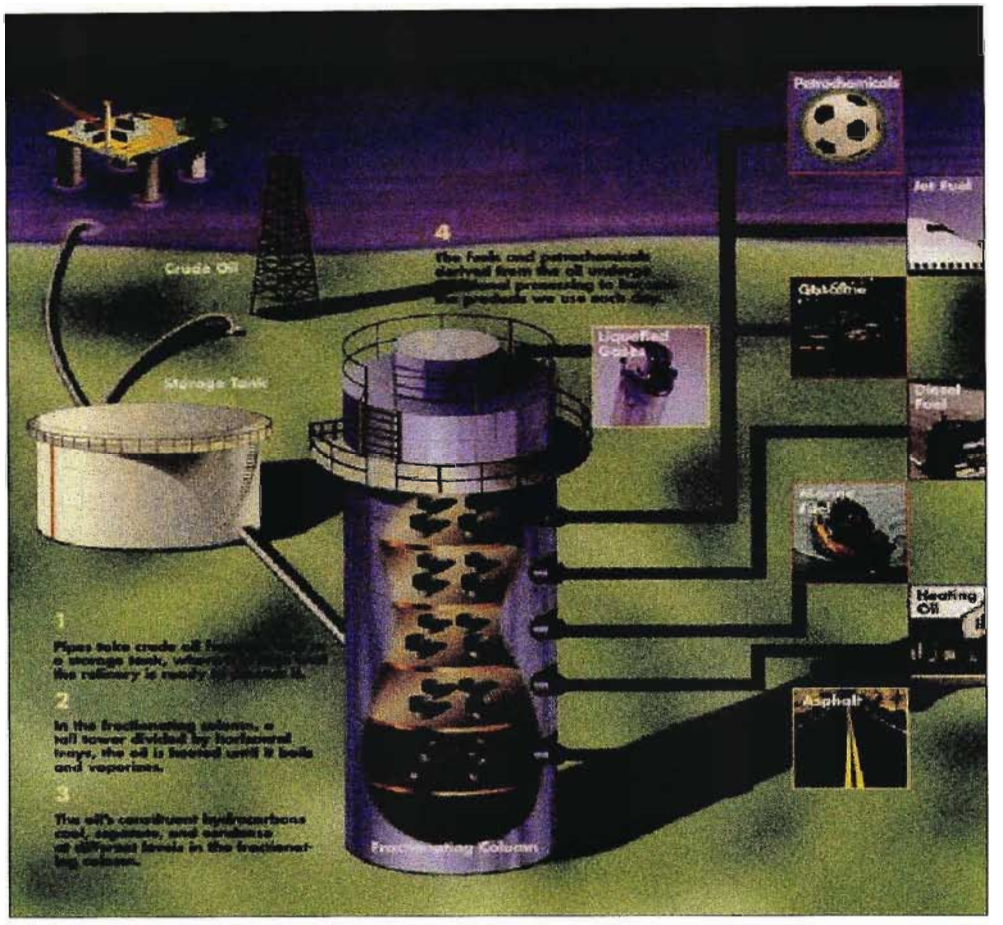
The public is concerned about potential hazards and the perceived threat to their health and safety, and exposure of such details on the Internet raises the level of public concern. Environmental and social concerns also include accident spills, emissions, and the release of air pollutants from refinery ducts. On top of the health of its workers and residents of neighbouring communities, petroleum companies have recently been faced with the task of providing protection from toxic exposure but, also from outside forces.

3.12 Technology

Petroleum extraction is an expensive and time-consuming process and is a necessity due to the product's usefulness. Competitors bring crude oil to consumers, a process that could be up to ten years depending on location especially with oil found offshore in deep water being the most difficult to extract. The process includes the decision to explore, through to discovery, testing, development, and the delivery of oil from a new field. There are five stages and these are: exploration and production of crude oil, transportation to the refinery, the refining process, transportation to consumers, and marketing (Figure 3.1). When a new oil field is found, the production stage begins with drilling. Oilrigs are commissioned to extract the crude oil and this must be transported off site. In the case of land fields, a pipeline system is

used to transport the crude oil to a refinery. Where the site is far off shore maritime vessels transport the oil to the refinery. The refinery utilises a fractioning column to separate the crude oil into different fractions, creating petroleum that can be used as liquefied gases, petrochemicals, jet fuel, gasoline, diesel, marine fuel, base oils, heating oil, and asphalt (Internet 59).

Figure 3.2 The Extraction and Refining Process



Source: Gereffi G., (2002). *Vertical/Integrated vs. Horizontal/Modular Shifts.* [online] Available from *http://www.duke.edu/~eds8/shit/Petroleum%20Industry%20Website-Soc142/Petroleum-Industry%20Structure.htm*

The growth of technological advances, e.g. America's fast vehicles and the factories in which such vehicles are manufactured, has resulted in a greater demand for petroleum. This has led to the need for new oil drilling sites, pipelines, refineries, storage tanks, ocean-going tankers and other facilities (Internet 60).

Continuous improvements in technology have enabled the industry to meet demands. New tools, can drill with greater precision than ever before and develop oil and natural gas fields

under the most extreme conditions imaginable, including deep water. Offshore platforms located on the North Sea are extraordinary engineering feats of our times.

The industry uses technology to improve the refining process to produce cleaner fuels and advanced information technology for applications such as 3-D seismic surveying, production control systems to the daily use of IT for management information systems and video conferencing. The well-known economist Lester Thurow put it this way (Internet 73): "The oil industry still produces oil, but it has been infused by so many new technologies that it should be thought of as one of the new manmade, brain-power industries like biotechnology".

3.13 Human Resources

Human resource is an essential ingredient of any organisation for the successful delivery of objectives and strategies. Total is striving towards creating a 'great place to work' for its employees and the areas contributing to this end are discussed.

3.13.1 Equity and Diversity

Total operates in a wide variety of disciplines in more than 120 countries worldwide, dealing with an extensive range of situations. This diversity represents an opportunity to bringing into contact a broad array of cultures, competencies and expectations. Whatever the conditions that prevail locally, Total conducts its operations in compliance with its Code of Conduct and standards, taking into account cultural differences.

3.13.2 Diversified, International Recruiting

Total has three major recruiting challenges. The first, an outgrowth of the merger between TotalFina and Elf, is to attract a steady stream of new employees to meet needs while leveraging synergies. The other two are more general, consisting of promoting employee diversity and creating an international pool of managers by capitalising on the variety of occupations and broad scope of its operations.

3.13.3 An Industrial and Commercial Group

Total owes its international scope to the diversity of its businesses. It was originally an oil and gas company, and now a chemical manufacturer as well, located near resources, offshore or onshore, often in sparsely populated areas. As a carrier, processor and retailer, the company has facilities in the major trade and consumer areas, near cities or in the heart of industrial complexes.

3.13.4 Compensation

Its policy aims to provide all employees, regardless of country or business, with Total compensation that is competitive in their market, rewarding both individual and corporate performance. Compensation policy is a major, permanent component of Total's efforts to attract, retain and motivate the many kinds of talent and expertise that is needed for long-term success.

3.13.5 Employee Share Ownership

Total actively promotes employee share ownership through regular share issues reserved for employees. Eligibility extends to all Total personnel in countries whose tax legislation; stock market regulations and exchange control rules permit capital increases under favourable financial terms.

3.13.6 A Non-Exclusive Stock Option Policy

Total granted 2,870,850 stock options to 3,864 employees worldwide, in all job categories, as compensation for their individual performance in 2002, amounting to more than 3% of its global personnel.

3.13.7 Insurance and Retirement

As part of its labour relations policy, Total can establish employee insurance and retirement plans that go beyond national requirements and, when necessary, offset the lack or inadequacy of government mandated programs. These plans contribute to the financial security of its employees and their families.

3.13.8 Career Management to Promote Mobility

Total defines mobility as any type of career change, from reassignment to a new region or business to a switch to a new career field. Mobility is in the company's interest, regularly encouraging employees to take a fresh approach to positions and creating a better in-house match between employees and its diverse activities.

3.13.9 Dedicated Career Managers

Total has a dedicated organisation that supports individual career development and promotes mobility within the company. Career managers review employees, their skills, potential and expectations, as well as our corporate needs and anticipated medium-term developments.

3.13.10 Surveys

Total set up a permanent procedure for soliciting employee feedback several years ago. It consists of an in-house survey conducted by Ipsos, an independent market research group. The survey, which previously polled only oil employees, was expanded to include chemicals employees in late 2002. The result of this pulse-taking exercise was forwarded to employees via the intranet, with comments by the management chain.

3.14 Total Logo

Total's logo (Figure 3.3) is the expression of a new group, and its future suggesting the global reach of its activities, its involvement in multiple energies and the purpose of its business, to bring energy and motion to the world.

Figure 3.3 Total Logo

Source: *Total Logo* (2003). [online] Available at http://www.environment.totalfinaelf.com/home/index.htm

The name Total is a word that expresses the universality of the organisations actions and its completeness to commitment. The trademark has built up substantial positive recognition among all of its stakeholders and customers.

3.15 Financial

Total is listed in Paris, London and New York and has an ongoing commitment to providing shareholders with complete, clear information with stable references in the presentation of its financial statements. As a result of its New York listing, Total complies with the Securities and Exchange Commission rules governing US oil companies. These rules call for the publication of comprehensive data on reserves, production, and costs, to allow a detailed analysis of performance, notably in exploration and production. The financial data and operating highlights for the period 2001 to 2003 are listed in Table 3.1.

Table 3.1 Financial Data and Operating Highlights

In millions of euros, except earnings per share, dividends and percent amounts.

	2003	**2002**	**2001**
Sales	104652	102540	105318
Operating income from business segments [1]	13004	10995	13121
Net operating income from business segments [1]	6973	5868	7564
Net income (Group share) [1]	7344	6260	7518
Earnings per share (€) [1] [2]	11.56	9.40	10.85
Dividend per share (€) [3]	4.70	4.10	3.80
Net debt –to-equity ratio	26%	29%	31%
Return on equity	26%	20%	24%
Cash flow from operating activities	12487	11006	12303
Total expenditures	7728	8657	10566
Operating Highlights			
Hydrocarbon production (kboe/d)	2539	2416	2197
Liquids production (kb/d)	1661	1589	1454
Gas production (Mcf/d)	4786	4532	4061
Refinery runs (kb/d) [4]	2481	2349	2465
Refined product sales (kb/d) [5]	3652	3380	3434

1. Adjusted for special items.
2. Based of fully diluted weighted average number of shares.
3. 2003 dividend: subject to approval by the May 14,2004 Annual Shareholders'Meeting.
4. Including share of Cepsa.
5. Including Tradmg activities and share of Cepsa.

Abbreviations

b	barrel	t	metric ton	B	billion
cf	cubic feet	boe	barrel of oil equivalent	T	trillion
/d	per day	k	thousand	MW	megawatt
/y	per year	M	million	MWp	megawatt peak
€	euro				

3.16 Sustainable Development

As a responsible industrial group, it efficiently manages the utilisation of all sources of energy and products it deals in. The company takes account of the needs of today's consumers and the interests of future generations by an active policy of environmental protection, which is an element of the group's strategy of sustainable development on which it regularly provides transparent reporting.

"*The very nature of our oil, gas and chemicals operations has long required us to factor environmental, social and cultural parameters into our industrial projects. Without this comprehensive approach, we would not have been able to integrate or succeed in diversified, often complex situations. This is the reason, for example, for our well-established commitment to consensus building and partnership with local communities, in particular in emerging countries. People are often unfamiliar with our challenging front-line initiatives, which may sometimes have been overshadowed by such distressing events as the sinking of the Erika and the AZF disaster in Toulouse, France. However, a careful review of our environmental, social and societal achievements in Europe, Asia, Africa, the Middle East, and Latin and North America reveals that we were committed to sustainable development well before the concept began garnering broad media coverage*". Thierry Desmarest Chairman and Chief Executive Officer

The company identified five main areas of action: leveraging oil and gas resources, developing new energies, improving products and their use, integrating operations into the local community and promoting sustainable development.

- Leveraging oil and gas resources: the optimum recovery of oil and natural gas, are essential components of energy supply for existing and future generations, through the use of efficient technologies, which helps to reduce dependence on carbon-intensive sources, such as coal, for power generation.
- Developing new energies: Total plays an active role in developing new sources of energy to gradually supplement hydrocarbon resources if their cost can be reduced through technological advances and breakthroughs.
- Improving products and their use: Total strives to tailor product performance to the challenges of sustainable development across their life cycle when making technical, strategic and marketing decisions.

- Integrating operations into local communities: It has forged sustainable relations with host communities by emphasising communication and support to local development in the areas of healthcare, education and economic development.
- Promoting sustainable development: This is being achieved through controlling and curbing greenhouse gas emissions, reducing releases and emissions of pollutants, carefully managing the water cycle, rehabilitating industrial sites and protecting biodiversity.

Total's ability to meet and anticipate the increasing demands of society contributed to its ability to operate and grow.

3.16.1 Environmental, Safety and Health

Society is increasingly turning its attention to environmental stewardship, industrial risks and public health concerns. These issues are the focus of Total's sustainable development process incorporating ambitious objectives for reducing environmental pollution, conserving energy and natural resources, as well as initiatives to reduce the health impact of its operations. The safety of people and plants is another group priority and is driving improvements in the management of technological risks, an objective embraced by all employees (Internet 1).

3.16.1.1 Environmental Management

As is the case for safety and quality, internal management systems have been set up in each activity to address environmental issues. This entails identifying progress objectives, deploying and tracking action plans and measuring the results obtained. These systems are evaluated periodically so that they can be continuously optimised. This assertive approach, which requires broad employee involvement, is based on information, feedback, discussion, awareness and training for the entire workforce. The two benchmarks for environmental management are ISO 14001 and EMAS (Eco Management and Audit Scheme). At the corporate level, the Sustainable Development and Environment Division lead an environment network to facilitate contacts and synergy among the core businesses. At present, it is estimated that more than 1,500 full time employees work on safety and environment issues with an annual operating budget of around €1 billion.

(i) Air

The company identified 16 priority volatile organic compounds (VOCs) and targeted cuts in their emissions of a third between 1999 and 2002. The substances are: benzene, chloroethane,

vinyl chloride, vinylidene chloride, dichloroethane, ethyl benzene, hydro-fluorocarbons, methyl methacrylate, styrene, tetrachloroethylene, tetra-chloromethane, toluene, tri-chloroethane, tri-chloroethylene, tri-chloromethane, and xylene.

(ii) Fresh Water

There are three basic ways that Total follows to protect freshwater resources:

- Reduce freshwater consumption,
- Curtail effluent in water sources and
- Develop more effective treatment methods.

(iii) Seawater

In Exploration & Production, the extraction of oil or gas inevitably entails water inflow into the reservoir and the older the field, the greater the amount of production water. In some cases, it can far exceed the amount of oil produced. Most of the production water is saline and contains a certain amount of hydrocarbons. It therefore needs to be treated before being re injected or released into the environment in compliance with existing standards.

Total's involvement in the marine environment mainly concerns offshore oil exploration and exploitation and the maritime shipment of hydrocarbons. Vessels are only acceptable if they have been monitored and operated for at least six months by the same operator. In practical terms, oil companies base selection of charter vessels on inspections during stopovers at ports. The companies pool their information through the Ship Inspection Report (SIRE) system, a database created at the initiative of the Oil Companies International Marine Forum (OCIMF) in 1993.

Total's volume of shipping in 2001 was similar to that of 2000, totalling 110 million metric tonnes of crude oil and refined products, around 2,200 charter parties, 40 time chartered ships, and some 60 ships spot-chartered on a permanent basis. The group's overriding objective was to rejuvenate its charter fleet and to replace single-hull vessels by double-hull ships as quickly as possible. The group operates a fleet of seven very large crude carriers (VLCCs-approximately 300,000 metric tonnes) with an average age of less than seven years.

People living near industrial facilities are naturally concerned about potential environmental and health risks and problems. Being aware of this unease, tragically crystallised by the AZF

disaster in Toulouse, France on September 21, 2001, the company broadened and enhanced its communication with local communities in 2002.

Oil companies have formed a number of oil spill response organisations that pool emergency resources. Equipment can be flown to oil spills anywhere in the world in just a few hours. The largest and best-known organisation is Oil Spill Response Ltd. (OSRL), which has a centre in Southampton and an alliance with a partner in Singapore and Total is a founding member.

In addition, Total set up the Fast Oil Spill Team (FOST), based in Rognac, near Marseille. The FOST unit combines all of the Group's emergency oil-spill resources, which are deployed with the support of a dedicated team of marine fire fighters from Marseille (approximately 40 people).

3.16.1.2 Safety

Safety is central to Total's businesses, which manages industrial risks of all types related to the production and handling of hazardous substances. Safety also encompasses the protection of people on the worksite during daily or special operations and projects. Each business faces specific challenges such as multiple manual operations, work by subcontractors, and high-risk activities. Preventing and managing risks entails disseminating a strong safety culture across Total, with the core principles set out in the Health Safety Environment Quality Charter published in January 2001 (Internet 1).

The explosion at the AZF plant in Toulouse, France, on September 21, 2001 prompted Total to further strengthen its safety organisation and programs. The exact cause of the disaster is still unknown and initiatives to enhance industrial safety were deployed across all businesses in 2002. In March 2002, the executive committee set two priority objectives for industrial safety and proposed a related action plan. These objectives are an updated review of the major technological risks in each business and an annual 15% reduction in the frequency of work-related incidents over the next four years. The action plan included tangible measures aimed at confirming the commitment of management, strengthening safety processes and practices, and improving communication and transparency. It also comprised a financial component, a four-year investment program.

The implementation of these priorities, supported by consolidation of the internal organisation at all levels, in particular through the creation of the corporate industrial safety division, made 2002 a milestone year for the ongoing reinforcement of safety.

(i) Risk Management

The company is directly concerned by the issue of managing risks, which encompasses people and property safety, relations with neighbours, hazardous materials transportation, and crisis management.

The oil and gas industry has always lived with risk and is constantly developing new techniques to manage it. For instance, a range of initiatives implemented throughout the upstream operations halved the lost time injury frequency (LTIF) for both company and contract personnel between 1992 and 2000, with contract personnel reaching a level similar to that of company personnel. Incident frequency is a significant safety indicator. In early 2002, Total set an objective of reducing the frequency of incidents with or without lost time by 15% a year over four years for group and contractor employees combined.

To further reduce the number of serious accidents, focus has moved to the main causes. In 2002, the breakdown by cause revealed that road-related incidents accounted for nine out of the 14 deaths. In the same year, 21% of all training days were devoted to safety and the environment. Cross-business working groups enabled sharing of the most innovative initiatives implemented locally. Total believes strongly in supplementing formal training through continuously monitoring social trends.

3.16.1.3 Health

Because of the diversity of its activities, the size and organisation of its companies, the types of jobs offered and local situations, Total deals with a wide variety of health-related issues. Generally speaking, the health policy aims first and foremost to provide optimal medical tracking of employees, through occupational medicine. Total already provides medical tracking to 95% of its workforce. Health is a core component of sustainable development. Economic activity cannot be expanded without healthy employees, families and communities. Many fatal infectious diseases worldwide, such as malaria, diarrhoea, tuberculosis, measles and, more recently, HIV/AIDS, confront the oil industry. The industry is increasingly working with host governments to enhance strategies for delivering healthcare services and infrastructure. Total has been very active in setting up infectious disease information and

prevention programs. The group's actions are tailored to local conditions and carried out within the national health system, when available. If this is inadequate, dedicated systems are set up in close cooperation with local authorities. The working conditions of Total employees are based on recognised international standards. The group is conscientious about supplying the resources for an effective occupational health policy in all its establishments.

3.16.2 Bio Diversity

Biodiversity, or biological diversity, means the diversity found throughout the living world. Preserving biodiversity is the only way to safeguard natural milieu and ensure that species retain the potential to evolve. Safeguarding biodiversity is also best way humankind can guarantee its survival faced with the twin challenges of industrialisation and population growth. Aware of its responsibilities in so far as an industrialist, Total placed biodiversity in the depth of its policy of sustainable development. In 1992 Total created the corporate foundation for biodiversity and the sea to concentrate on protection of coastal ecosystems.

3.16.3 Promoting Best Practice

Total's three core businesses are responsible for implementing its sustainable development process and initiatives. A steering committee comprising representatives of all businesses and the parent company develops and disseminates methodologies, enhances feedback and stimulates integration of the process into management processes. A network of around 60 representatives in operating units supports it. An annual seminar brings together operating units to exchange best practices and propose action plans. "We are committed to sustainable development both as a company and as citizens of planet Earth" Thierry Desmarest Chairman and Chief Executive Officer – Total.

3.16.4 Assistance to Local Communities

Total played a significant role in providing support to the local communities including emergency response and the Asian Tsunami.

3.16.4.1 Emergency Response

In Angola, the ceasefire agreement signed in April 2002 by the government in Luanda and the UNITA rebels opened up areas previously isolated by the civil war. When the critical situation in these areas was revealed, Total organised initial emergency aid. A convoy of ten trucks, each carrying 35 metric tonnes of goods and staples such as blankets and concentrated milk, was sent to the Sambo and Chiteta camps in the Huambo region. The camps sheltered

around 60,000 people, including 15,000 children. In late July, a second operation, organised with the Caritas Diocesana association, distributed large amounts of medicine, including drugs against fevers, diarrhoea and parasites, antibiotics and painkillers, in Bié and Moxico provinces. The Group spent $1 million on this emergency humanitarian aid. Independent of dedicated special initiatives in Angola conducted with the support of local NGOs; Total also delivers ongoing support for humanitarian actions, mainly aimed at children. For instance, it provides food and medical assistance for the Kwzola orphanage in Luanda, home to 200 children under 14, and for three food centres in the capital.

Total has long supported the development of small and medium-sized companies in the regions where it operate. Today, one of its main priorities is formalising this process and promoting experience sharing among regions and business segments. At the same time, it is strengthening its practice of forming partnerships with NGOs, that are well established locally and encouraging the active participation of the community.

3.16.4.2 Asian Tsunami –Total's Initiatives

On December 26, 2004 Southern Asia was struck by a catastrophe a violent sub-sea earthquake and tsunami, affecting the community in surrounding coastal areas. Total and its subsidiaries provided resources and first emergency relief efforts to the afflicted families. The organisation has 6000 employees in Asia, and more than 4000 are employed in the tsunami-stricken countries. Fortunately Total did not suffer the deaths of any of its employees. Its relief effort amounted to € 2.3 million of which about € 1 million was donated to the Red Cross, Care and Unicef (Internet 63).

In addition it provided medical teams, supplied kerosene, transport vehicles, chartered a large aircraft to carry medicine and equipment, and made arrangements to train new teachers for the schools in Aceh. It has also pledged to a grant one-year scholarships for students from Aceh at the Bandung Technological Institute. The Indonesia subsidiary has pledged to finance the construction of 400 homes, in the first phase of a 1,700-home housing programme supported by the government. Beyond these measures, the company will continue its efforts and is assessing ways to contribute to the rebuilding this area, which has suffered a severe setback.

The corporate social responsibility indicators (Table 3.2) display key figures in the areas of environment, safety, human resources and society.

Table 3.2 Corporate Social Responsibilities – Indicators

Key Figures:
Environmental, Safety, Human Resources and Societal Indicators

Operations	2001	2002	2003	%Change 2002/2003
Oil and natural gas production (in millions of barrels of oil equivalent per day)	2.20	2.42	2.54	+ 5%
Proved reserves (in billions of barrels of oil equivalent)	10.98	11.20	11.40	+ 2%
Refinery Throughput (in millions of barrels per day)	2.47	2.35	2.48	+ 6%

Environmental Indicators			2001	2002	2003
NO_x	'000 metric tonnes/year	Upstream	49.6	43.0	49.5
		Downstream	25.8	23.2	24.9
		Chemicals	12.6	12.7	12.4
SO_2	'000 metric tonnes/year	Upstream	37.6	42.3	46.6
		Downstream	106.6	96.9	98.1
		Chemicals	14.6	18.2	12.0
VOCs	'000 metric tonnes/year	Upstream	113.8	105.1	95.5
		Downstream	20.7	20.8	30.7
		Chemicals	26.8	24.6	24.5
Water Releases (excluding cooling water)	Mcu.m/year	Upstream	67.2	72.3	73.5
		Downstream	54.6	53.6	49.0
		Chemicals	67.4	57.6	42.5
Suspended Solids Releases	'000 metric tonnes/year	Downstream	0.7	0.8	0.8
		Chemicals	6.7	5.6	5.2
Chemical oxygen demand (COD) releases	'000 metric tonnes/year	Downstream	3.6	4.4	4.7
		Chemicals	8.3	8.2	7.3
Hydrocarbon Release	'000 metric tonnes/year	Upstream	5,024	4,640	2,749
		Downstream	88.3	92.7	122.0
		Chemicals	25.6	40.1	31.7
	ppm	Upstream	101	88	46
E&P oil spills	number		215	165	286
	in metric tonnes		11,076	284	162
Greenhouse gases	MTCDE per year	Upstream	32.9	29.8	29.3
		Downstream	22.7	21.3	22.4
		Chemicals	18.6	16.8	14.2
Energy Consumption	Mtoe/year	Upstream	2,276	2,306	2,617
		Downstream	7,778	7,293	7,575
		Chemicals	6,731	6,811	7,079
Hazardous waste production (treated offsite)	'000 metric tonnes/year	Upstream	10.5	15.3	25.2
		Downstream	54.0	58.0	111.1
		Chemicals	143.9	148.5	153.6

Safety Indicators			2001	2002	2003
Group and Contractor employee work related incidents	TRIR*	Exploration & Production	10.0	5.1	3.8
		Gas & Power	13.8	9.0	5.9
		Refining & Marketing	16.0	10.8	7.9
		Integrated Chemicals & Specialties	22.4	18.9	16.8
		Group average (all business)	**15.4**	**11.8**	**9.5**
		Oil and Petrochemicals average	**12.6**	**7.9**	**6.0**
Group and Contractor employee work related incidents	LTIF**	Exploration & Production	10.0	5.1	3.8
		Gas & Power	13.8	9.0	5.9
		Refining & Marketing	16.0	10.8	7.9
		Integrated Chemicals & Specialties	22.4	18.9	16.8
		Group average (all business)	**15.4**	**11.8**	**9.5**
		Oil and Petrochemicals average	**12.6**	**7.9**	**6.0**
Group and contractor employee fatalities			41***	14	11

*TRIR: Total recordable incident rate (number of incidents with or without lost time per million man-hours worked).
**LTIF: Lost time incident frequency (number of lost time incidents per million man-hours worked).
*** Of which 21 related to the AZF explosion in Toulouse

Human Resource Indicators		Upstream	Downstream	Chemicals	Holding Company	Total
Workforce	2003	14,017	34,410	61,212	1,144	110,783
	2002	14,019	35,054	71,268	1,128	121,469
	2001	13,870	35,743	71,312	1,100	122,025
Workforce by age bracket (%)		< 25	25-35	35-45	45-55	>55
	2003	7	25	29	28	11
	2002	6	24	29	31	10
Women in each age bracket (%)		< 25	25-35	35-45	45-55	>55
	2003	33	31	27	23	19
	2002	31	28	26	22	16
Women managers in each bracket (%)		< 25	25-35	35-45	45-55	>55
	2003	28	27	18	12	7
	2002	35	27	19	12	6

Average number of training days employee by region		Africa	Asia Middle East Pacific DOM-TOM*	Europe (excluding France)	France	Americas per
	2003	10.0	4.4	4.2	3.8	3.4
	2002	8.1	4.1	3.0	3.4	2.6

Average number of training days		France	Europe	Americas	Africa	Asia Middle East Pacific DOM-TOM*
	2003 (%)	44.8	27.2	14.1	6.6	7.3
		49,637	30,128	15,641	7,259	8,118
	2002 (%)	43.6	30.9	13.0	5.8	6.7
		52,915	37,584	15,848	7,020	8,102

* French overseas departments and territories

Societal Indicators						
Voluntary external spending type initiative (in € million)	Total	Economic development	Good Neighbor	Health care and Social Support	Education and youth	Training by
Total amount non-OECD in 2003	57	17.2	10.6	11.7	4.6	12.9
Total amount non-OECD in 2002	75	23.2	15.8	10.5	6.8	18.8

Expressed in U.S. dollars, 2003 societal spending was unchanged in 2002

3.17 Total is a Member of the Global Compact

This United Nations sponsored platform was initiated by UN Secretary-General Kofi Annan to promote dialogue among all relevant global players, such as corporations, non-governmental organisations (NGOs), UN agencies, unions, academic institutions and governments, to put a human face on the global economy. The Global Compact unites more than 600 companies, international institutions and NGOs, who have committed to support nine fundamental principles in the areas of human rights, labour relations and the environment.

Total signed a contract with Good Corporation to assess application of its Code of Conduct. UK-based Good Corporation works with auditors such as KPMG, Bureau Veritas and Pricewaterhouse Coopers. In close cooperation with Total's Ethics Committee, it developed a grid of 74 criteria that can be used to define the ethical profile of the unit assessed, as perceived by employees, shareholders, customers, suppliers, and the host country environment and communities.

Total's Code of Conduct sets a strict framework of general principles and rules, whose application management must monitor at all times in a wide variety of circumstances. Anticipating and preventing problems in these areas is the duty of everyone in the company.

3.18 Total South Africa

This section discusses the case study with emphasis on Total South Africa's contribution on strategy and sustainable development.

3.18.1 Introduction

In 1954 a team of dedicated, professional and enthusiastic men took the decision to establish an oil company in South Africa in spite of the odds and the fact that the Government and its competitors regarded the new company as a no-hoper. On December 11, 1954 Total Oil Products (Pty) Ltd was incorporated in South Africa as a company and the first board meeting was held on December 14, 1954. Dalemont and Flamand were ready to attack the South African market and show the other established companies that Total had no intention of failing as they predicted. The birth of Total in 1954 laid the foundation for a company that would soon become a pioneer in various areas in the oil industry in South Africa. Today, fifty years later Total has not failed as predicted, but has become a dominant force in the oil industry in South Africa.

3.18.2 The South African Petroleum Industry

South Africa has a sophisticated lubricants industry, which includes base oil refining, lubricant blending and the marketing of finished lubricants. The industry is perhaps the largest on the continent and is supported by the strong chemicals sector, which offers local availability of additives. It meets the needs of the automotive market as well the industrial sectors in a highly competitive market (Internet 61). Fuel companies as well as Mobil, Castrol, Agip and a range of smaller companies market lubricants. The fuel companies, which market lubricants, include BP, Caltex, Engen, Shell and Total. Marketing is achieved through service station forecourts, through supermarkets such as Pick n' Pay, through commercial channels and by direct customer sales. Sasol has recently entered the lubricant market, deriving part of its technology from Carl Bechem, its European shareholding. The refining of base oils is carried out at two refineries located in Durban by Samco refinery which is jointly owned by Shell and BP and at Safor owned by Engen, Caltex and Total.

3.18.3 Leadership

Philip Jordan is the Chief Executive Officer of the South African subsidiary and has been with the group for 25 years, serving the company in various positions in the UK, Belgium, Italy and Germany. This is his first posting outside Europe and he says the decision to send him to Africa was a complete surprise. "Much as I was very surprised, I quickly realised this was a fantastic opportunity for me professionally and privately". The 49 year old Cambridge graduate who is married to a French woman says although he has never been to South Africa before, he does not feel totally foreign to it because the world has been talking about this country for many years. In December 2004, Phillip Jordan was elected Chairperson of the South African Petroleum Industry Association (SAPIA).

3.18.4 Totals Mission

Total South Africa's mission is to create sustainable shareholder value by being: an excellent corporate citizen, number one with customers and providing a great place to work.

3.18.5 Total's 5-Year Vision

'To be the best and the most trusted and reliable service provider at the lowest achievable cost in the petroleum industry in South Africa'.

3.18.6 Total's Strategy

TSA has mapped out the following strategy. "Total will be the most respected service provider operating at the most efficient cost and fully committed to its responsibilities towards its employees and external stakeholders".

It has established and committed itself to the following values: Pride, Diversity, Transparency, Professionalism and HSEQ. These values provide a guideline for executing its strategy and strategic objectives.

3.18.7 Objectives

Total SA set objectives for profitability, differentiation, innovation, professionalism, relationship, sales, market share and black economic empowerment.

3.18.7.1 Profitability

To grow its market share and meet profitability objectives as per the approved budgets for 2004 and beyond by:

- Analysing customer base, per division, to determine profitability per channel trade and per customer and to be reviewed quarterly.
- Ensuring efficiency and effectiveness of Capex and Opex budget application and to be part of the monthly review key performance indicators.
- Structuring all business channels to ensure maximum margin benefit.
- Reviewing costing and pricing of lubricants quarterly through the Lubricants Task Team.
- Quarterly review and reduction in cost of servicing customers or recovering costs by charging for services.

3.18.7.2 Differentiation

To establish differentiated service levels that position Total in line with its mission by:

- Optimising value-add of Integrated Service Provision in all other divisions. Leverage on services and attracting premium charges where possible.
- Offering technical services as a value-add and support to marketing efforts.
- Developing value-add technological solutions, e.g. Fuel Card, thereby reducing the need for capital investment and ensuring a better return on the existing network.

3.18.7.3 Innovation

Develop innovative solutions and products to meet customer needs by:

- Providing cost effective solutions to customer requirements.
- Retaining profitable customers to ensure a continued and profitable revenue base.

3.18.7.4 Professionalism

Providing key customer service by:

- Developing detailed marketing plans per channel of trade.
- Promoting quality and professional sales calls thus reducing and controlling operational costs.

3.18.7.5 Relationships

Developing and sustaining customer relationships externally and internally by:

- Embracing the customer's business as its' own.
- Reviewing marketing plans to ensure alignment with objectives per channel of trade.
- High profile visits to strategic customers with senior management.

3.18.7.6 Sales Objectives

- To decrease existing main fuel sales volumes over the next 5 years by moving new customers to TCS.
- To decrease fuel sales by moving customers those require BEE status to TCS.
- To increase Route Africa Sales volumes over the next 5 years with 66 million litres.
- To grow sales volumes for lubricants from 2005 to 2009 by 4.89%.

Table 3.3 depicts the sales objective from 2004 to 2009 for: main fuels, Jet A1, lubes and greases, and diesel sales through route Africa.

Table 3.3 Sales Objectives

Product	ER 2004	Budget 2005	2006	2007	2008	2009
Main fuels	1048 678200	965 396 606	926 158 318	886 936 030	847 713 742	808 491 454
Jet A1	284 600 000	259 700 000	274 025 000	288 350 000	302 675 000	317 000 000
Lubes & Greases	37 149 975	40 121 473	40 602 931	41 084 389	41 565 846	42 047 304
Diesel Route Africa	102 000 000	112 200 000	126 225 000	140 250 000	154 275 000	168 300 000

3.18.7.7 Market Share Objectives

Table 3.4 displays Total's market share objectives. The company's objective is to increase its market share incrementally from 17.61% in 2004 to 21.89% in 2009 for main fuels and similarly for lubes from 7.58% to 11.02% for the same period.

Table 3.4 Market Share Objectives

	2004	2005	2006	2007	2008
Main Fuels	17.61%	18.68%	19.75%	20.82%	21.89%
Lubes	7.58%	8.44%	9.30%	10.16%	11.02%

3.18.7.8 Black Economic Empowerment Procurement

The following objective has been set (Table 3.5):

- To move the current Consumer & Specialties BEE spends from 22% to 30% and Lube Manufacturing Plant from 18% to 20% from 2004 to 2005.
- Workshop with Procurement Manager to verify BEE status of all C&S and LMP Suppliers (± 30% of LMP Suppliers must be verified)

Table 3.5 BEE Procurement

	2004	2005	2006	2007	2008
C&S	22%	30%	35%	40%	45%
LMP	18%	20%	22%	24%	26%

3.18.7.9 Employment Equity Target

The employment equity target is reflected in Table 3.6, which is to increase the number of historically disadvantaged South Africans in the middle management band from 45% in 2004 to 66% in 2008.

Table 3.6 Employment Equity Target: HDSA in Middle Management (HG 11 to HG 14)

2004	2005	2006	2007	2008
45%	50%	55%	61%	66%

3.18.8 Customer Services and Marketing

The customers talk to the company directly through a customer contact centre established to handle queries, complaints and compliments. All calls to the customer contact centre are logged and the customers are responded to within twenty-four hours. The subsidiary has enjoyed a unique relationship with organised agriculture going back to 1956. Unique in the

sense that it was built on a gentleman's agreement that was based on the supply of petroleum products to farmers that revolutionised the way in which farmers were able to acquire these products. In addition to making it easier for farmers to buy their petroleum products from Total through their agricultural co-operatives, the company had in 1966 introduced a scheme that saved farmers more than R1 million per year at the time in the cost of lubricants.

Total South Africa supplies both foreign companies and governments with its products. The exports of main fuels and lubricants to African countries are gaining momentum and have shown that the market is growing fast. Total Lubricants, fuels and bitumen are mainly exported to countries such as Namibia, Botswana, Lesotho, Swaziland, Mozambique, Zimbabwe, Malawi, Zambia, Madagascar, Reunion, Haiti and the Congo. With the rapid changes that are taking place in the design and manufacture of original engines, Total South Africa has to ensure that it stays abreast of the demands for high quality products by the manufacturers of new original engines. In South Africa it has a very close relationship with Toyota Motor Corporation, Daimler Chrysler, Renault and Peugeot. Moreover, it offers its customers a trouble free service: The Route Africa card which is a fuel-payment card, enables customers to access management information within 24 hours via the Internet. This helps alleviate fraud, since the customer will see where and when the card was used. Route Africa cardholders purchase fuel at discounted prices.

Known for its record of firsts over the past fifty years, Total South Africa has done it again. This time around, it has made history by being the first oil company in South Africa to become a member of Proudly South Africa on 20/05/2004.

3.18.9 Technical Advisory

Total's lubrication engineers, district managers and distributor representatives are fully qualified to conduct full plant surveys to determine a customer's lubricant requirements. The plant surveys are carried out on machinery, machine parts, recommending products, re-lubrication time cycle, visual inspection check cycle, special instructions and stock recommendation. Lubricants are a remarkable indicator of the overall functioning and wear on a ship at sea. In "normal" engine operating conditions the deterioration of a lubricant takes place at a "normal" speed, i.e. very slowly. Severe conditions and engine malfunctions cause faster deterioration. Monitoring a lubricant in service and analysing the results determine the condition not only of the lubricant, but that of the engine, the main auxiliaries on board, and their components.

Totals Integrated Service Solution was developed to transform the relationship with the customer to that of partnership wherein each has the interest of the other. The knowledge and experience of the experts help to advice customers on products best suited for their equipments and needs. A big basket of lubricants is provided to its current and potential customers that comply with the latest technological requirements. The types of customers that utilise this service include, mining, steel, paper, automotive and aviation.

Total South Africa' Integrated Petroleum Management Service (IPMS), known as Integrated Service Solution gives commercial customers a better way to buy and manage fuels and lubricants. While implementing IPMS the customer has the following at their disposal: the provision of an information management system, the provision of a program for assessing fuel and lubricants consumption and cost per equipment by using a holistic approach. Total provides the capital for the upgrading of equipment facilities to comply with ISO 14000 standards; the responsibility for stock control; the replenishment of fuels and lubricants; and provide qualified staff-support to handle fuels and lubricants, technical and application issues. The benefits of implementing IPMS include cutting operation costs on fuel and lubricant purchases, and reducing losses as a result of the inefficient functioning of equipment.

3.18.10 Black Economic Empowerment

"Total South Africa is now one of the major companies that are committed to Black Economic Empowerment" says the subsidiary's Chief Executive Officer, Philip Jordan. "It's not just a matter of being politically correct", asserts Morakile Shuenyane, Deputy Managing Director of the subsidiary. "There must be a meaningful commitment to the government's effort to rebuild this country. The Harvard graduate has now come to terms with the task that awaits him, and indeed everyone else, in this country where 42% of people are unemployed, where millions of people still live below the poverty line, where the handmaidens of poverty, crime and AIDS are still rampant".

Blacks own 25% of the company, and in less than three years it achieved one of the major targets set by the charter for 2010. Total's BEE wing is known as Total Commercial Services, the department in which the author is employed. Total Commercial Services (PTY) LTD (TCS) previously traded as Total Petroleum Renaissance until the beginning of May 2003. It was initially owned by Calulo Investments (PTY) LTD (51%) and 49% by Total South Africa. Eleven new empowerment groups joined forces with Calulo Investments to form Total South Africa Consortium (Tosaco), consortium of twelve black empowerment

companies that eventually bought 25% of Total South Africa. This enabled Total South Africa (TSA) to meet their BEE target of 25% as recommended by the Petroleum Charter released by the Minister of Minerals and Energy Affairs.

The company adopted an aggressive procurement policy to enhance Black Economic Empowerment to address the economic imbalances in South Africa by bringing Black entrepreneurs into the mainstream of the South African economy. It followed a consistent policy of identifying potential entrepreneurs in the disadvantage communities to be trained and empowered as service station dealers, providing full training and assistance to prospective entrepreneurs to become dealers. This is referred to the as the Total Retail Entrepreneurship Empowerment Program especially targeted to historically disadvantaged individuals. The company as part of its policy to enhance its Black Economic Empowerment program also initiated an Illuminating Paraffin Distributorship program. The objective of the project was the creation of employment opportunities in previously disadvantaged communities.

3.18.11 Environment

South Africa's environmental heritage ranks among the richest and the most diverse in the world and to this end, Total fuels and lubricants are environmentally friendly and of high quality ensuring high engine performance. All the products are environmental friendly, biodegradable and very friendly to most predators.

3.18.12 Products

Total is renowned for producing some of the best high quality lubricants available on the market today. Its superior oils, tailor-made for the engines of today, and ready for tomorrow, are distributed throughout South Africa under the highest levels of quality control. The automotive oil range includes: petrol engine oils for all types of engines (car, motorbikes, chainsaw and lawnmowers), diesel engine oils for diesel engines (cars, heavy vehicles), transmission oils for gear boxes and braking systems, tractor oils for agricultural use, automotive specialties: for special fluids systems (Citroen cars) and severe climatic conditions.

Its petrol is of top quality and blended to ensure easy starting, rapid warm-up, vapour lock & anti-knock resistance as well as good storage stability. The fuel contains deposit control additive that minimises inlet valve and fuel injection system deposits. Total illuminating paraffin is a high-energy fuel available throughout Southern Africa for use in paraffin lamps,

stoves, and refrigerators. It is also used as an industrial heating fuel and as a solvent. Total is a major player in the aviation industry. It is one of the biggest suppliers of Jet A-1 at the Johannesburg International Airport and at the Cape Town International Airport. Air Total provides commercial as well as general aviation with a full range of products and services.

The development of eco-diesel by Total which has 0.3% sulphur content has played a major role in assisting manufacturers in designing and distributing diesel powered passenger cars that are technically more advanced. The Company distributes diesel that contains no sulphur, also known as zero-rated diesel, especially for cars intended for the export market. Total sells and delivers a wide range of marine products such as fuels, gas oils, and lubricants to ship owners, operators, and buyers. Vessels are serviced in Durban, Richards Bay, Cape Town and Walvis Bay harbours and include coordination and follow-up of vessel delivery operations in compliance with the relevant sales contract and local requirements.

3.18.13 Operations

Total shares a refinery with Sasol called Natref (National Petroleum Refiners of South Africa), which is at the cutting edge of refining technology having a capacity of 108500 barrels/stream per day. It has been certified in terms of the ISO 14001 Environmental Management System and has embarked on a 10-year emission reduction program making it environmentally friendly.

There is a network of 650 Service stations that are located throughout South Africa. The company is renowned for producing some of the best high-quality lubricants available on the market today. It collaborates consistently with major engine makers in Europe, Japan and America along with specialist research and development and this has helped put its products in a pre-eminent position in the market. The superior oils, tailor-made for the engines of today, and ready for tomorrow, are produced at the Lube Manufacturing Plant in Durban and distributed throughout South Africa under the highest levels of quality control and can be supplied anywhere in the world. The plant ranks among the most advanced in the world, achieving ISO 14001 international listing, ISO 9001, and level 3 in the ISSSRS, producing top of the line lubricants that are user and environmentally friendly. It is committed to complying with the clean air and water acts, among other regulation. This means that customers can have complete peace of mind when using Total's products. The plant is part of Total's Island View Terminal in Durban, which also houses oil and fuel storage facilities, and a modern grease plant in Africa. It is also a major distribution centre from where Total

products are distributed to its retail outlets, depots and consumer customers. It is situated close to the Safor refinery from where it sources the bulk of its base oil for the manufacturing of the company's top of the line lubricants for use in a large variety of motor vehicles, marine, industrial and the mining sector. Lubricants are blended according to specifications developed by the Total group's research facility at Gonvreville in France.

Total South Africa has a privileged relationship with the sectors that manage fleet. These sectors include passenger transport, road haulage, warehousing, distribution and logistics, road construction, building construction and manufacturing. A full range of products, from main fuels such as petrol and diesel, and lubricants for any type of application are available. The products are distributed to customers either at their own commercial installations or through customers-own-collection points at major Total service stations on all the main routes in the country.

3.18.14 Sponsorships

Total SA has made sponsorships to cultural heritage, drama, female farmer of the year and sports

3.18.14.1 Cultural heritage

Total South Africa's sponsorship of the Sibikwa Community Theatre project located in Benoni in Gauteng Province, has since 1994, made a major contribution towards the promotion of the unique cultural heritage of South Africa among the previously disadvantaged communities in the area. The activities of the Total Sibikwa Community Theatre project are inline with the stated objectives of the Government's arts and culture policy. The main objective is to promote the Afro centric aspect of the country's cultural heritage. Today the Sibikwa Community Theatre is a vibrant community resource centre. The management of Sibikwa has, with the help of students, converted a deserted factory in Benoni in a project that offers the communities on the East Rand with excellent facilities. These facilities include a spacious dance studio, rehearsal room, art room, a music room and a 180-seater theatre.

3.18.14.2 Drama

The Aardklop National Arts Festival was held in Potchefstroom in the North West Province, from 24 to 28 September 2002. It was supported for the first time in 2002 by Total. The drama, Mamma Medea that is based on the Greek tragedy written by Euripides and deals

extensively with the problems of cultural diversity, was also sponsored by Total. The Aardklop National Arts Festival is one of the most important cultural events on the national calendar and consists of productions across the cultural perspective. This includes drama, contemporary and classical music, rock and jazz, children's theatre, the visual arts and street theatre.

3.18.14.3 Female Farmer of the Year

The annual Female Farmer of the Year competition, organised by the Department of Agriculture and supported by Total, recognises the role that rural women play in contributing towards food, security, and economic growth through their engagement in agricultural production. Total has been the main sponsor of the 'Female Farmer of the Year' contest organised by the Department of Agriculture. The award program is aimed to highlight, recognise and tangibly reward female farmers from all population groups for the indispensable contribution they have made to the country's economy. Since its inception, in 1999, the contest has become a vehicle for success stories identifying and paying tribute to female farmers from all nine provinces.

3.18.14.4 Sports

The involvement in and support for motor sport by Total since 1957 has been more than just a philanthropic gesture by the company. Total's decision to sponsor motor sport is part of the marketing strategy that it had developed when it entered South Africa in 1954. For the past ten years, Total South Africa has been a major supporter of soccer in South Africa. The support included the sponsorship of two of the leading Professional Soccer League's (PSL) clubs and the development of soccer at grassroots level. Its first venture into soccer sponsorship was in 1996 when it sponsored Kaizer Chiefs, a popular soccer club in South Africa. This sponsorship deal lasted three years and in 2000 the subsidiary announced its sponsorship of Ajax Cape Town and Moroka Swallows. It was an associate sponsor of Tembisa Classic, Bloemfontein Celtic, as well as the KFC Cup involving some 4 200 schools. The company played a major part in the establishment of the RAU Soccer Excellence project. At grassroots level it supports the development of community based soccer teams in Vosloorus near Johannesburg, Tembisa as well as Cape Town.

3.18.15 Sustainable Development Initiatives

The initiatives discussed include conservation, marine, Rose Foundation and sustainable development task force.

3.18.15.1 Conservation

"To exist as a nation, to prosper as a state, and to live as a people, we must have trees". - Theodore Roosevelt (Internet 56). Total is a proud supporter of the annual Green Trust awards that was established by the World Wide Fund (WWF) and Nedbank. The support of the Green Trust is part of its commitment to support the conservation of South Africa's natural environment. In 1995, Total won the corporate category, based on the company's on-going commitment to environmental conservation. It was the first oil company to win this award, which was presented His Royal Highness, the Duke of Edinburgh.

3.18.15.2 Marine

It supported the Oceanographic Institute in Durban over a number of years and has also financially supported research by the Oceanographic Institute into starfish. Total and the Corporate Foundation have also funded the on-going research into the conservation of sea turtles by Dr George Hughes, formerly from the Natal Parks Board. Dr Hughes has been making a study of the sea turtles along the KwaZulu Natal north coast for more than 25 years. Working closely with the Oceanographic Institute in Port Elizabeth, it funded a research study to promote the survival of the Cape Baby Fur Seal. The Cape Baby Fur Seal has been under pressure for many years.

Co-operating with the University of Cape Town, a project to study the Black Oyster Catcher along the Cape coast has also been jointly funded by Total and the Corporate Foundation. The well-known whale conservationist, Dr Peter Best, received funds from the subsidiary to publish a definitive work on the Blue whale along the South African Coastline.

It is also involved in the education of communities on the need to conserve the environment and how this leads to the promotion of sustainable eco-tourism and the spin-offs namely assisting with job creation, and making financial contributions to marine biodiversity research projects. Working closely with the Corporate Foundation as well as local conservation agencies such as the WWF for Nature in South Africa, many partnerships have been formed with organisations involved in promoting eco-tourism and marine biodiversity studies.

The conservation of the world's marine biodiversity is an important focus for the Total Group and its subsidiaries throughout the world. The group's Corporate Foundation sets the tone for conservation activities throughout the group and this also affects the conservation projects supported by Total South Africa as part of its own environmental conservation program. The

major objective of conservation is to promote and finance studies about the impact of human activity on marine biodiversity. Since much of the Group's operations take place offshore, it is only natural that advancing the conservation of this environment is a major focus.

3.18.15.3 Rose Foundation

The need to create greater environmental awareness for the recycling of used oil led to the establishment of the Rose Foundation in 1994. Total South Africa is one of the 17 members of the foundation. The objective of the foundation is to manage the environmentally acceptable collection; storage and recycling used lubricating oil throughout South Africa. The environmental work that is undertaken by the Rose Foundation is funded by the members who contribute 5 cents per litre for every litre of new lubricating oil that is sold. In order to create a greater awareness among commerce and industry in the country for the need to handle used oil in a more environmentally acceptable manner, and to encourage companies that reprocess used oil, the Foundation instituted a major educational campaign in 1999.

3.18.15.4 Sustainable Development Task Force

The Group took a decision to establish a Sustainable Development Task Force to formulate policy on sustainable development and its implementation as part of the business process. Five areas have been identified as "paths to Sustainable development" which are: integrating the groups operations into local communities; enhancing the value of hydrocarbon resources; developing new energy sources; improving the company's products and their use, and minimising its environmental footprint. This is in keeping with the group's global strategy.

3.19 Conclusion

This chapter discussed the case study of Total from a global perspective and then converged on to the South African subsidiary. It touched on the history, operations, macro environment, the industry environment, mission, values, strategies, human resources and covered an in depth discussion of sustainable development and its contributing components. Total has most certainly sunk its teeth deep into aspects related to sustainable development, which is evident by its involvement in corporate social responsibility initiatives, long before the term became a buzzword. The global oil industry is extensive and subsequently only selected information was captured in this chapter. A foundation has now been laid to evaluate Total's sustainable development strategy using the tools and models discussed and developed in chapter 2. This will be accomplished in chapter 4.

Chapter 4: Evaluation of the Total's Current Strategies

4.1 Introduction

The ability of an organisation to maintain its competitive position in a world of rivalry and change depends on how well it crafts, implements and evaluates its strategy. In order to formulate and adjust strategies to changing circumstances a process of evaluation is necessary which forms an essential part in guiding an organisation. Many executives may view it is an appraisal of how well the business is performing, has it grown, is the profit rate normal or better? Well it goes beyond this simplicity. Strategy evaluation attempts to look beyond the obvious facts regarding short-term health of the business and appraises those factors and trends, which governs its success in its chosen field of endeavour (Mintzberg, 1991: 52-53). It is crucial to the long-term success of the business in a dynamic world. This chapter evaluates Total's current strategies using the tools and models identified in chapter 2 at France, head office, and South Africa (subsidiary) and generates information that would be useful for comparison and recommendations in chapter 5.

4.2 Macro Environment Analysis

Macro environment factors are country specific, however, overlaps do exist especially with in the petroleum industries. The analysis will be performed in the political, economic, social, technological, ecological and legal spheres on both the French and South African environments.

4.2.1 Political

The global political environment has been affected by the wars declared by America on Afghanistan and Iraq. Any major activity on American soil sends a ripple effect across the globe due to its resources, power, and political influence with major oil exporting and importing countries. The planet has been plagued with local and world wars, political unrest since 1973 that have impacted on the oil prices. Some of the major events include are (Internet 64):

- '86-87: OPEC countries set quotas on oil production
- '90: Gulf war
- '93: North Sea oil production
- '96: Sadam kicked NATO weapon inspectors out of the country
- '98: Mexico, Venezuela, and Saudi Arabia formed a consortium to cut production

- '00: the dot.com market busted affecting the stock market and slowing down the world economies.
- '00-01: OPEC started cutbacks, but supply still outpaced demand
- '9/11/01: Oil prices dropped from $28/bbl to $20/bbl
- '02: America's war on Afghanistan
- '03 – 04: America's war on Iraq

These activities, mostly political have impacted on the world supply of oil and subsequently the price per barrel and continue to do so. Policies of exporting nations affect the global supply chain, as OPEC membership is made up of countries and not companies. OPEC has an effect on the prices of world oil by controlling the supply side of the equation.

Since achieving democracy in 1994 the South African government has worked towards bringing economic equality to historically disadvantaged groups. The government has committed to ensuring that black owned companies have access to the energy sector. Under the black economic empowerment (BEE) program targets were set for the percentage of each industry to be controlled by black-owned corporations. White owned corporations sold assets to achieve this objective. At the end of 2001, petroleum companies including BP, Caltex, Shell and Total signed the Oil Industry Charter for Transformation, which aimed to have black controlled companies owning 25% of the oil sector by 2011. Similarly, the government aims to reserve 10% of new natural gas exploration licenses for BEE companies (Internet 65). Total has to deal with unfamiliar political systems when investing abroad as well as with government supervision and regulation. Major political concerns affecting international businesses are political risk and political instability.

4.2.2 Economic

The economic environment represents the economic conditions in the country where the organisation operates. This part of the environment includes factors such as economic development, infrastructure, resource and product markets, exchange rates; and inflation, interest rates and economic growth. "The need for continued economic growth and human development has long been recognised as an essential factor in helping to reduce poverty and to improve the quality of life throughout the international community. But differences in culture, values, economic strengths and political systems have lead to concerns that an

expanding global economy may exacerbate the existing problems of human rights abuse and environmental degradation..."(Internet 60).

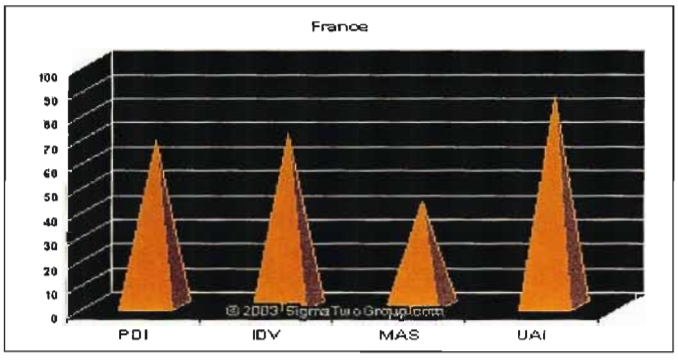
France is under going a transition from an economy that has featured extensive government intervention to one that relies more on market mechanisms. The socialist government is embarking on privatisation of many large companies, banks, and insurers; however it retains controlling stakes in several leading companies. It has lowered income taxes and introduced measures to boost employment. France is a founding member of the European Union (EU) and in January 1999, adopted the European single currency, the Euro. The tax burden is one of the highest in Europe (43.8% of GDP in 2003). Business investment has remained listless because of low rates of capital utilisation, sluggish demand, high debt, and the steep cost of capital (Internet 66). The role of oil in France's energy sector has decreased substantially since the 1970s with contribution to primary consumption falling from 71% in 1973 to 40% in 2001, while nuclear power increased from 2% to 39% over the comparable time period. Since January 2004, France's proven crude oil reserves totalled 148 million barrels, making it dependent on imports. In 2003, the consumption was an estimated 2.06 million barrels per day (bbl/d) of oil, of which 97%, or 1.99 million (bbl/d), was imported (Internet 67).

According to Global Insight, 20.5 million black South Africans were living in poverty in 2003, compared with 190,000 white South Africans. Unemployment was estimated at 30%. Poverty among the disadvantaged groups is exacerbated by high HIV/AIDS infection rates. GDP grew 2.6% in 2004, and is forecast to grow 3.2% in 2005. Inflation was 1.4% in 2004 and is forecast at 3.0% for 2005. In August 2004, the South African Reserve Bank's Monetary Policy Committee (MPC) lowered interest rates by 50 base points. Inflation has remained low and the currency is stable (Internet 65). South Africa has the most advanced economy on the continent and the economy is growing rapidly ever since achieving liberation in 1994. The major industries include the mining sector, manufacturing and agriculture. Mining is South Africa's largest industry sector followed by manufacturing, oil and gas, chemicals, agriculture and tourism. It is globally recognised as being a leading supplier of a variety of minerals and mineral products including gold, platinum group elements, coal and diamonds (Internet 70). Both France and South Africa have good infrastructures that support economic activities and include transportation facilities such as airports, highways, and railroads; energy producing facilities such as power plants; and communication facilities such as telephone lines, satellite, cellular communication and broadcasting stations.

4.2.3 Social and Cultural

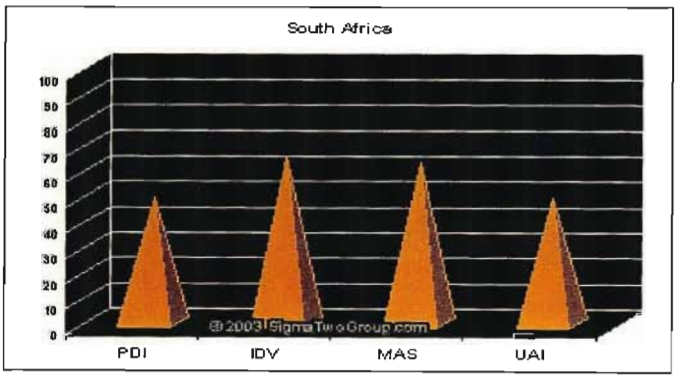
The socio-cultural environment also plays an important role and analysis is necessary. Social values include power distance (PDI), uncertainty avoidance (UAI), individualism (IDV) and collectivism and masculinity/femininity (MAS). Social values influence organisational functioning and management styles. Geert Hofstede analysis for France illustrates its emphasis on uncertainty avoidance indicating concerns for rules, regulations, and issues with career security. In addition to uncertainty avoidance, both individualism and power distance are also ranked fairly high, with masculinity ranking the lowest (Figure 4.1). France is higher on power distance, individualism and uncertainty avoidance compared to South Africa (Table 4.1).

Figure 4.1 Cultural Dimensions of France



Source: Geert Hofstede™ Cultural Dimensions, 2003, [online] available at http://www.geert-hofstede.com/hofstede_france.shtml

Figure 4.2 Cultural Dimensions of South Africa



Source: Geert Hofstede™ Cultural Dimensions, 2003, [online] available at http://www.geert-hofstede.com/hofstede_south_africa.shtml

The French are very aware of their presence, and are extremely proud of their heritage. They boast of their long history and their important roles in world affairs, as well as being known as a world centre for culture.

Table 4.1 Cultural Dimensions of France and South Africa

Country	Power Distance	Individualism	Uncertainty Avoidance	Masculinity
France	68	71	86	43
South Africa	49	65	49	63

Source: Hofstede's Dimension of Culture Scale, 2003, [online] available at http://spectrum.troyst.edu/~vorism/hofstede.htm

They are very conscientious of their appearance. French businessmen do not loosen their ties or take off their jackets in the office. Business can be conducted during any meal, but lunch is best. French is the official language in France (Internet 68).

Geert Hofstede's analysis for South Africa illustrates its emphasis on individualism (Figure 4.2). The country is ranked high in all categories of the model. Almost 75 % of its population is Black and approximately 15% is White and the balance from minor ethnic group comprising of Coloured/Cape Malay, Chinese and Indian. There are 11 official languages with most South Africans speaking English and Afrikaans. The handshake is the most common greeting and a variety exists between ethnic groups. Business meetings can be held over lunch or dinner in a good restaurant (Internet 69).

Total tailored its actions to that of local conditions and set up close cooperation with local authorities. The health of employees, families and communities is another important social factor for consideration. Many fatal infectious diseases worldwide, such as malaria, diarrhoea, tuberculosis, measles, confront the industry and more recently, HIV/AIDS claiming many lives annually. Total is working with the host governments to enhance strategies for delivering healthcare services and infrastructure. It has been very active in setting up infectious disease information and prevention. The health of workers and community is also affected by toxic compounds released by oil companies e.g. hydrogen sulphide which is highly toxic compound present in some natural gas deposits that is released into the air during the refining process. It has a strong odour and continuous exposure to even low levels lead to loss sense of smell and ill health. On top of the health of its workers and residents of neighbouring communities, petroleum companies are faced with the task of providing protection by outside forces.

Companies are increasingly facing broad requirements under which they are expected to identify and respond to stakeholder and societal needs. The risks posed to the business and its reputation is correspondingly diverse. Many petroleum companies recognise, for example,

that their prospects of gaining new licences or access to new commercial opportunities are significantly enhanced by showing that governments, partners and suppliers want to work with them on non-financial as well as commercial criteria (Internet 71).

4.2.4 Technological

The explosion of technology in the 20th century has transformed how we live and work and it has also transformed the oil and gas industry. Petroleum extraction is expensive, time-consuming, utilising highly sophisticated and complex technological process being necessity to keep the world in motion. The growth of technological advances, e.g. fast vehicles and the factories, in which they are manufactured, has resulted in a greater demand for cleaner burning fuels and improved lubricants. This has led to the need for new oil drilling sites, pipelines, efficient refining process, storage tanks, ocean-going tankers and other facilities (Internet 60).

Continuous improvements in technology have enabled the industry to meet the growing energy needs at reasonable prices whilst minimising environmental impact. Improvements have revolutionised the development and finding of energy, enabling the growth of reserves and production in ways undreamed of before. New tools make it possible to drill with greater precision than ever before and develop oil and natural gas fields under the most extreme conditions imaginable, including deep water up to two miles below the water surface. Offshore platforms, many of them in hostile environments like the North Sea, rank among the most extraordinary engineering feats of our times (Internet 73).

Technology is also being used in the industry to improve the refining processes, so that cleaner fuels can be produced. The petroleum industry is one of the most advanced users of information technology. This includes direct application in technologies such as 3-D seismic surveying and production control systems to the daily use of IT for management information systems and video conferencing. In France exploration is focused on developing off shore natural gas fields as crude oil is imported into the country primarily from Saudi Arabia and Norway, and to a lesser extent, from United Kingdom, Iraq, Iran, Nigeria, and Russia. Until the 1990s, the upstream oil industry did not exist.

South Africa's upstream has played a minimal role in the evolution of the South African oil industry. Exploration for more than thirty years has revealed no onshore hydrocarbons. Currently there are small producing oilfields off the South East coast of South Africa. A gas

field has been discovered off the West coast of South Africa and exploration continues in a number of offshore areas (Internet 72). Both France and South Africa uses state of the art technology for offshore purpose as they import crude oil, which is refined at local refineries. The blending of lubricants is a simple process involving the mixing of base oils and additives.

4.2.5 Ecological

Worldwide, oil and gas field development causes a number of diverse problems and often leads to irreversible environmental degradation. This results in negative consequences for the environment that are enhanced by bad practices common among domestic producers. The major cities in France such e.g. Paris suffers from air pollution. Despite the reduction in its oil imports, France has been the unfortunate victim of several major oil tanker spills that has damaged the country's tourism, fishing industries along the Atlantic Ocean coast. Although the Erika oil spill occurred over 50 miles from shore, stormy weather caused a 14-mile oil slick to wash up on the coastline killing birds, destroying marine life and damaged tourism for months afterward. In June 2003, France's Cabinet of Ministers approved a plan that would modify the French constitution to give environmental protection as much weight as human rights. French President Jacques Chirac became the driving force behind the "environment charter," a bill that attempts to make France a world leader in promoting environmental concerns (Internet 74).

The South African environment is plagued with coal intensive activities that contribute to large scale water and air pollution, including significant carbon dioxide emissions. In addition tanker spills and leaks at refineries and synthetic fuel plants contribute to groundwater and marine pollution. South Africa also acceded as a party to the Kyoto Protocol on July 31, 2002 being recognised as a developing country. In 2002, Johannesburg hosted the United Nations Conference on Environment and Development (UNCED), which focused on environmental issues. The effects of pollution caused by use of leaded gasoline by older vehicles have been compounded by the historical absence of vehicle emissions legislation. The four oil refineries in South Africa are major contributor to air pollution emitting high levels of sulphur dioxide and several other chemicals known to cause health problems. Caltex's, Shell and BP, are evaluating upgrades to their facilities, which have contributed to air and groundwater pollution. In July 2001, Sapref the refinery shared by Shell and BP became a rallying point for protest after a pipeline leaked more than 264,000 gallons of petroleum underground, the world's largest underground oil spill. In addition to air pollution, marine pollution has affected

sea life, seabird and mammal populations, as well as pristine beaches. South Africa has been vulnerable to spills by ships transporting oil along the coast en route from the Middle East to Europe and the Americas especially at Saldhana Bay, where crude oil imports are discharged to state-owned facilities (Internet 75). On the 24 November 2004 in Bangkok, Mr. Valli Moosa of South Africa was elected as the new President of IUCN at the World Conservation Union. This was announced at a press conference organised at the Queen Sirikit National Convention Centre (Internet 79).

4.2.6 Legal

Government laws and regulations differ from country to country and make manufacturing and sales a true challenge for international firms. Host governments have myriad laws concerning safety and environmental issues. There are regulatory laws and clauses on petroleum refining, drilling, and production promulgated by international and local bodies that are specific to the Petroleum industry e.g. EPA (Environmental Protection Agency) which has regulated the international level of sulphur content in diesel fuel. Although Industry Associations and non-governmental organisations have a role in trying to protect both the Oil and Gas Industry and the environment the Petroleum Industry's future largely hinges upon world oil prices and the strength of OPEC.

In South Africa, October 1997, the Department of Environmental Affairs and Tourism (DEAT), developed the White Paper on Environmental Management, which provided the framework for modern environmental policy in South Africa. This was embodied in the 1988 National Environmental Act addressing issues such as air, water and marine pollution, waste management, deforestation, energy efficiency and the conservation of biodiversity. In April 2003, the Department of Environmental Affairs and Tourism proposed draft legislation for new ambient air quality standards for industries. The National Air Quality Management Bill aimed to control air pollution, emission of greenhouse gases, and ozone-depleting pollutants by setting permissible concentrations of several polluting substances as well as total emissions levels (Internet 75).

France has adopted the European Commission's 'green paper' on corporate social responsibility, which requires listed companies to publish information on environmental and social impact of their activities in their annual reports. This includes the use of water and natural resources, their emissions of greenhouse gases and energy consumption, and efforts undertaken to reduce environmental risks and educating employees on environmental

management. To control air pollution problem, the French Environment and Energy Control Agency (ADEME) has equipped the country with a monitoring system to comply with the national Air Pollution Act requirements (Internet 74).

The macro environment analysis was carried out according to the PESTEL model highlighting areas that significantly impact on the operations of an organisation in its local and international environment. Although overlaps do occur, these are country specific forming an essential component of the organisations environmental scan and is pivotal to strategy formulation and evaluation. The next step would be to carry out the industry analysis.

4.3 Industry Analysis

Industry analysis complements analyses of the other dimensions of a firm's environment. It focuses on the industries in which the firm competes, in this case the petroleum industry. The key issues facing the industry, Porters five forces model, national competitiveness and components of competitor analysis will be discussed.

4.3.1 Driving Forces and Key Issues Facing the Competitive Petroleum Industry

The forces of technology, economics and socio-politics have begun to create a new world, one that is characterised by openness and the free flow of knowledge and information. The petroleum industry was arguably the first global industry more than a century ago now with few barriers, transparency and the wide availability of low cost information. Key issues facing the industry today are firstly mergers and acquisition among the major oil companies. Mergers have characterised the global industry: between Exxon and Mobil, BP, Amoco, Arco and Burmah Castrol, Chevron and Texaco and Total, which merged with Fina and Elf. In South Africa there was the merger between Shell South Africa (SSA) and Tepco in 2002, which was given the green lights by the competition tribunal (Internet 77).

The top eight major petroleum companies at the end of 2003 ranked by Petroleum Intelligence Weekly were Saudi Aramco, ExxonMobil, National Iranian Oil Company, Petroleos de Venezuela, BP Amoco, Royal Dutch Shell, Chevron Texaco and Total (Internet 57). At the end of 2004 Total was ranked the fourth largest oil company in the world in terms of market value. While many products are fungible, logistics may minimise shipping over long distances. In many cases manufacturers in widely separated locations simply trade products between each other on paper, and physical delivery is made by the nearest manufacturing facility regardless of which company is the owner.

Table 4.2 Percentage Market Shares of Each of the Participants on a National Level for Overlapping Product Markets, Based on Sales Data

MARKET SEGMENTS	Products	SSA	BP	Caltex	Engen	Sasol	Total	Afric Oil	Exel	Tepco	Merged Entity
RETAIL	Petrol	**18.2**	16.1	18.7	27.1	6.4	12.3	-	1.1	**0.2**	**18.4**
	Diesel	**25.3**	15.3	12.8	31.7	0.8	13.0	-	1.0	**0.1**	**25.4**
COMMERCIAL	Petrol	**13.7**	14.7	7.9	22.6	2.4	24.1	0.3	11.7	**2.7**	**16.4**
	Diesel	**16.2**	15.3	16.8	27.0	0.6	14.0	0.2	6.1	**3.7**	**19.9**
	Paraffin	**19.2**	16.9	16.7	31.2	-	8.0	-	2.7	**5.2**	**24.4**

Source: *Competition Tribunal Republic Of South Africa the large merger between: Shell South Africa (Pty) Ltd and Tepco Petroleum (Pty) Ltd* (2002) [online] Available from: http://www.comptrib.co.za/decidedcases/html/66LMOCT01M.HTM

Table 4.2 shows the percentage market shares of the major South African petroleum companies in the retail and commercial segments on a national level for overlapping product markets, based on 2000 sales data. The merger offers mutual benefits for the companies with Tepco making major gains in the retail segment and Shell in the commercial segment.

In Johannesburg Nov. 2, 2004 Petronas a Malaysian subsidiary signed agreements with South Africa's Sasol, Worldwide African Investment Holdings to combine Sasol's Liquid Fuels Business and Engen in a new liquid fuels joint venture, Uhambo Oil Limited. The transaction's completion was subject to the approval of competition authorities in South Africa and the European Union, was expected during the first half of 2005. It has been estimated that the joint venture will have a market share of about 33% in South Africa for white petroleum products mostly gasoline, kerosene, jet fuel and diesel and will make Uhambo the leading liquid fuels marketing business in South Africa (Internet 78).

Then there is the focus of deepwater exploration and development e.g. In the North Sea, innovative technology has made it possible to drill to depths of up to 2 miles. These projects are capital intensive. Business profitability is also function of location and market. China, parts of Asia and Latin America are high growth markets that are offering fertile grounds for investments.

4.3.2 Porter's Five Forces Analysis

Michael E. Porter developed an assessment model for analysing industry structure according to the intensity of rivalry among competitors, the threat of new entrants, threat of substitute products, the bargaining power of suppliers and the bargaining power of buyers or customers. This model will be used to evaluate the situation in the petroleum industry.

Table 4.3 Porters five forces analysis for the Petroleum Industry

Forces	Rating	Remarks
The intensity of rivalry among competitors	High	• Mergers and Acquisitions have been the growth strategy adopted by the majors to increase market share. • Market is dominated a few major players at the Top. • There are hundreds of smaller companies in the niche market where there is intense rivalry. Most of them tend to be acquired by the majors.
The threat of new entrants	Medium	• The initial start up costs are extremely high which is attributed to technological requirements. This is even more so for the majors most of whom have become vertically integrated. • Resources are limited and alternative forms of future energy are being researched. • Human capital is a key ingredient especially from the technical domain.
Threat of substitute products	High	• The lubricants market is competitive and best performing products are the winners. There are just a few products that are differentiated. Additive suppliers research the technology and pass this onto the industry. • Fuels are similar except for the additive technology. • New technologies are being researched. The trend is move towards Liquefied Natural Gas (LNG). • Alternate forms of energy production are prevalent e.g. wind, solar, hydro electrical, and fuel cells.
The bargaining power of suppliers	Low	• OPEC is major controller of world crude supply. • Production cut backs increase the price per barrel • There are many additive suppliers and choice depends on the best technology, service and price.
The bargaining power of buyers or customers	Medium	• In terms of fuels there are not many options available, the norm is consumer loyalty to a company as prices tend to be fixed in a regulated market. • On the contrary the deregulated market offers consumers similar products at competitive prices with consumers influencing prices.

Table 4.3 shows the five forces and their ratings in the petroleum industry. In the case of the petroleum industry these tend to be generalised across the world due to the necessity of the product in the global village. These forces collectively describe the state of competition in the industry and assist in identifying the presence or absence of potential high returns. The petroleum industry is awesome and given revenue size and large capital investment, exit barriers are high.

4.3.3 Analysis of National Competitiveness using Porters Diamond

Michael Porter theorised four broad attributes of a nation that shape the environment in which local firms compete and these are factor endowments, demand conditions, relating and supporting industries and firm strategy, structure, and rivalry.

4.3.3.1 Factor Conditions

Factors such as natural resources, climate and un/semi-skilled labour are inherited while others like transport, educational system and technology have to be developed requiring investment in human and physical capital. In terms of the petroleum industries, both South Africa and France have the necessary conditions to optimise refinery operations. Exploration activity depends on locating natural resources such as oil fields and is found mainly in oil producing countries. Both countries engage in off shore exploration and have acquired the necessary technology to drill for liquefied natural gas. France has developed a well organised education system to meet this need. Present trends of automation in the industry have reduced the need for unskilled labour with the majority of employees on offshore platforms being engineers being recruited from both local and international sources.

Poor climate makes offshore drilling difficult especially in the depths of the North Sea demanding innovation in drilling and oilrig technology. The drillings has to be pumped to refineries through pipelines located on close to the shore, creating spill over effects to related and supporting industries. Capital resource is also a constraint especially for exploiting new fields and discovery and is provided by government and the private sector.

4.3.3.2 Demand Conditions

The French and South African economies dictate their own demands for fuels and lubricants stemming from market pressures, government regulations and supply. There is continuous demand for fuel with population and consumer growth and this makes it difficult for the home market to become saturated. South Africa exports fuels to neighbouring states e.g. Zimbabwe.

The price of oil and gas is decided on the world market, where OPEC is the controlling organisation and competitive advantage in the international market is achieved through cost effective technology, organisation structure and effective solutions. Demand conditions depend on other parts of the diamond such as strong domestic rivalry.

4.3.3.3 Related and Supporting Industries

Cluster formation in the industry exists between the organisation, engineers, refineries, integrated offshore supplier, petroleum research, shipping industry, road and rail transporters and more. The need for space is also an element within the oil industry and its supporting and related industries. The coast is not the best place for creating infrastructure, and therefore to transport oil and gas in an efficient and cost effective way to the refineries, pipeline technology was necessary thus spilling over into the steel and engineering industries.

The industry cooperates with other industries and they benefit from each other. The most important industries that are related to the oil and gas industry are shipping industry, communication industry, finance and other energy companies. Many of the technical suppliers for the oil and gas industry work in both industries and are specialised towards these industries and benefit from each other and are constantly in development, both in technology and work processes.

4.3.3.4 Firm Structure and Strategy and Rivalry

This is an overlap from the Porters Five Force model where rivalry was perceived as being unhealthy for the business. In the diamond this element is encouraged as, Porter argues that vigorous domestic rivalry is strongly associated with competitive advantage in an industry. The price on oil and gas is often determined by how much oil at any time is available. Now during the unstable times in Iraq, which is one of the World's biggest oil reservoirs, the price is much higher than usual because the export from Iraq could stop or be cut off at any moment. Apart from politics this has an element of strategy embedded in it as well. It is difficult to establish new oil companies in both France and South Africa due to magnitude of capital that is required. Major players have already established themselves and rivalry amongst the minority does not impact significantly on competitive advantage. The industry structure is affected by local conditions with trends to become less hierarchical in both countries.

4.3.3.5 Role of Government

The government has played an important role in the stimulation of competition in the oil industry by privatisation of state owned/subsidised entities e.g. Sasol, Soekor and Mossgas in South Africa, as protected industries are uncompetitive. It has a duty to promote competition e.g. the creation of competition Tribunal to evaluate mergers and acquisition e.g. the proposed Sasol and Engen merger in South Africa.

The analysis of national competitiveness in the chosen countries through the use of Porters Diamond has shown that all four conditions contribute to competitive advantage in the petroleum industry and in addition the government has a role to play. The next step is to examine the industry life cycle.

4.3.4 Life Cycle Analysis

Petrol is derived from crude oil, a non-renewable fossil fuel that is limited and may eventually run out although not until many decades to come. OPEC's oil reserves are estimated to last another 80 years at current production rates (Internet 80). Petrol is only one of the end products of crude oil along with plastics, chemicals and pesticides. This evaluation will focus on the different types of product life cycles. Crude oil is currently in the mature stage and will be there for a few more decades. The possible replacement is liquefied natural gas, currently at the growth phase. Each of the products have their own life cycles, e.g. diesel which contained sulphur at the 0.55% has been phased out and replaced by Eco diesel and Eco diesel plus in South Africa. In France Xeol will be one of the replacements to meet the requirements of low sulphur diesel and EPA regulations. Lubricants have much shorter life cycles and changes occur with technological development to meet the specifications of American Petroleum Institute (API), International Organisation for Standardisation (ISO), Original Equipment Manufacturers (OEM) and more. In terms of base oils which forms part of the blending component, Poly alpha olefins (PAO) which is high cost synthetic base oil is currently incorporated in the blend formulations of synthetic and semi synthetic lubricants. This will be one of the replacements of mineral oils, which are derived from crude oil distillation. There is yet another form of life cycle assessment that is particularly applicable to environmental and sustainable development initiatives, often referred to as the cradle to grave cycle of the product. The product goes through the initial phase where it is introduced into the equipment, followed by period of use until its active properties are exhausted and finally it has to be disposed off. This type of life cycle has a bearing on application and the volume of

product, e.g. in the case of marine oils this has to be long lasting as vessels spend extended periods out at sea. In the case of motor vehicles the duration is approximately ten thousand kilometres and with the substitution of mineral base oil with PAO, the product life cycle has been increased to twenty thousand kilometres. Life cycle analysis is a powerful tool that assists to formulate environmental legislation, analyse processes and improve products, and assists consumers in making correct choices.

4.4 Internal Analysis

The internal environment consists of the inherent competencies of the organisation and the structure of its internal systems and processes. Internal analysis will provide a clear picture regarding the strengths, weaknesses, opportunities and strengths (SWOT) of the organisation.

4.4.1 SWOT Analysis

The SWOT analysis builds on the results of the PESTEL analysis with the purpose to identify company strengths and weaknesses so that strengths can be maintained or increased and weaknesses eliminated. In addition opportunities and threats resulting from external factors especially those that have an impact on the company's strengths and weaknesses have to be identified in all aspects of the business. These are compared to competitors and are relative to previous performance or expected performance relative to customers.

4.4.1.1 Strengths

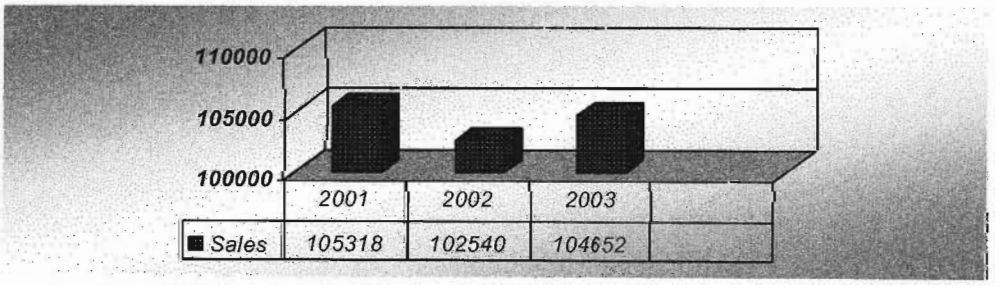
In 2003, the Group recorded net income of 7.34 billion euros adjusted for special items, an increase of 17% over the previous year. Earnings per share adjusted for special items rose to a record level of 11.56 euros, compared to 9.40 euros in 2002, a 23% increase. In the Upstream segment, there was a 5.1% growth in the oil and gas production, the strongest of the major oil companies in 2003. Total has continued to be successful in exploration, with major discoveries with oil and gas reserves increased by 2% to 11.4 billion barrels of oil equivalent at the end of 2003. For the year 2003, the board proposed the distribution of a dividend of 4.70, an increase of 0.6 euros per share compared to 2002. The dividends doubled in 4 years as it declared dividends of 2.35 euros in 1999. Sales rose by 2% between 2003 and 2002. Operating Income adjusted for special items increased by 18%. Cash flow from operating activities increased by 13%. Return on Average Capital Employed (ROACE) was 19% highest level among its competitors. ROACE in Upstream was 29% in 2003. ROACE in Downstream was 15% in 2003. ROACE in Chemical was 4% in 2003. Liquids production increased by 5% in 2003 due to the contribution of Sincor in Venezuela, Cepsa's production

in Algeria, Balal and South Pars in Iran, and Amenam in Nigeria. Gas Production grew by 6% in 2003, the largest contributors being Gulf Mexico, Indonesia and the North Sea. Proved Hydrocarbon reserves increased by 2% in 2003 to a level representing 12.3 yrs of production at current rate. Return on Equity in 2003 was 26% in 2003 compared to 20% in 2002. In European midstream gas, Total strengthened its position through acquisition of ExxonMobil's distribution business in the UK. In marketing Total strengthened its positions in Italy, Portugal, and Germany through service station swaps with main competitors. In France the implementation of a new market segmentation strategy help the group to increase its market share of on-road fuel in 2003.

Total is the world's fourth largest producer of hydrocarbons, being number one in Africa and number 2 in the Middle East. In SA the company has developed strong brand equity for its hydraulic products e.g. Azolla ZS 68, crankcase oils e.g. Quartz 9000 and the quartz range. In Europe the Activa Brands are popular. Ceran HV is the company's flagship grease with demands outstripping supply. Effective advertising has been achieved through the use of sponsorships of sports e.g. soccer, nature conservation. Like its competitors Total has focused on growth strategies as seen by its mergers with Fina and Elf. The company has instituted a recruitment programme to source the best talent in the globe. Total has been innovative in optimisation of its process, drilling in ultra deep water for LNG, looking at alternative sources of for energy e.g. photovoltaic, solar, wind, fuel cells and more. It has withstood international competition and 2004 it was the fourth largest oil company previously occupying the fifth position. The company has sufficient reserves to withstand sudden changes in the environment. The reserve including retained earnings in 2003 was 45 251million euros.

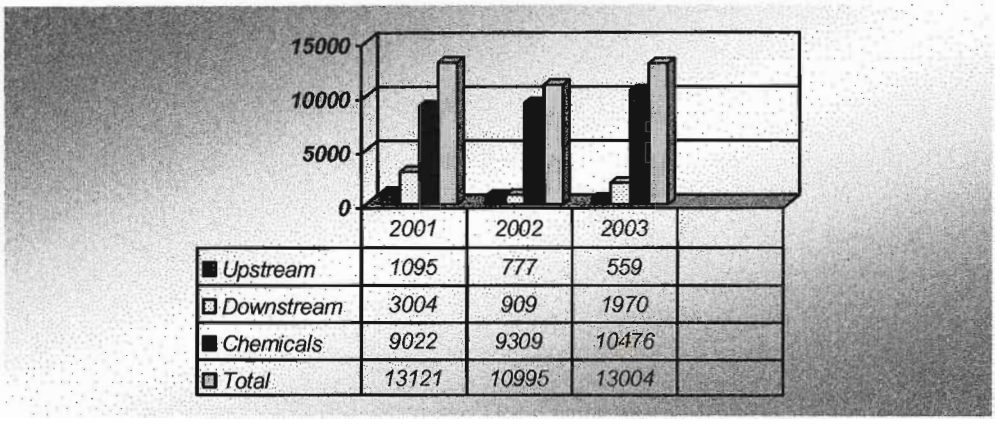
(i) Financial Metrics

Figure 4.3 Sales (M€)



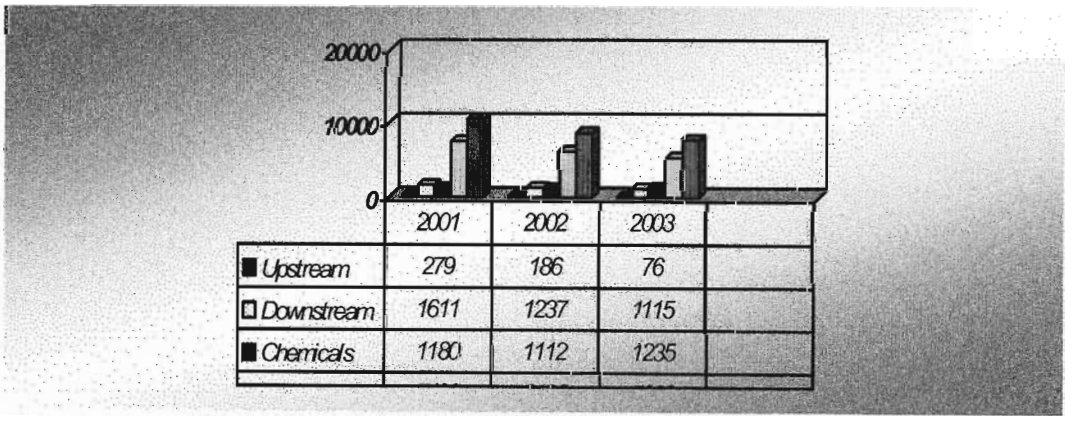
There has been a drop in sales from 2001 to 2002; however in 2003 there was an increase in sales, which was still lower, when compared to 2001 figures (Figure 4.3).

Figure 4.4 Operating Income from Business Segments (M€) (adjusted for special items)



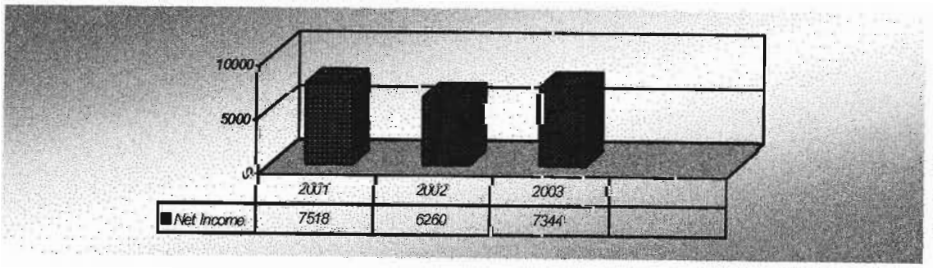
The overall income from all three segments decreased from 2001 to 2003, effectively contributed by decreases in the upstream and downstream segments (Figure 4.4). On a brighter not the chemicals segment showed an increase.

Figure 4.5 Total Expenditures by Segment (M€)



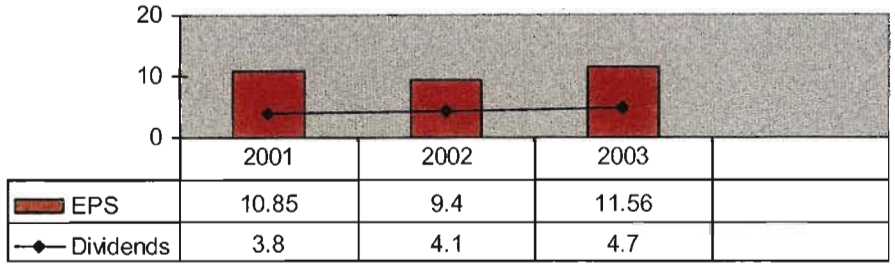
On a favourable note there was a progressive decrease in total expenditure over the three years (Figure 4.5).

Figure 4.6 Net Income (M€) (Group Share adjusted for special items)



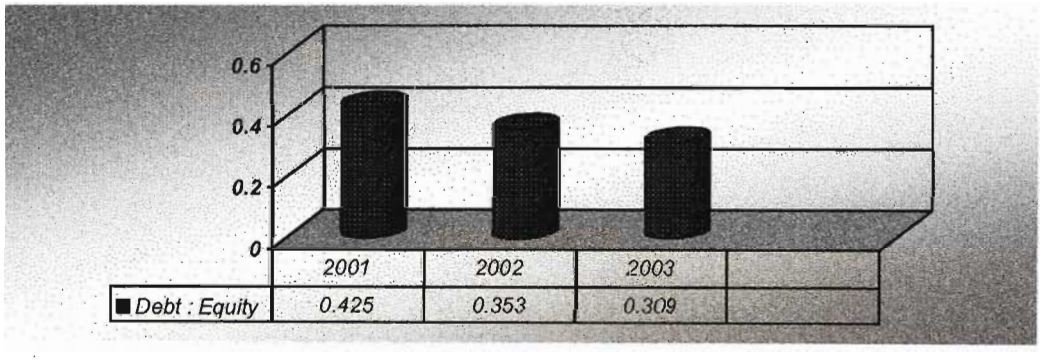
There was a decrease in net income between 2001 and 2002 and in 2003 there was an increase (Figure 4.6).

Figure 4.7 Earnings and Dividends per Share (€/Share) (Adjusted for Special Items)



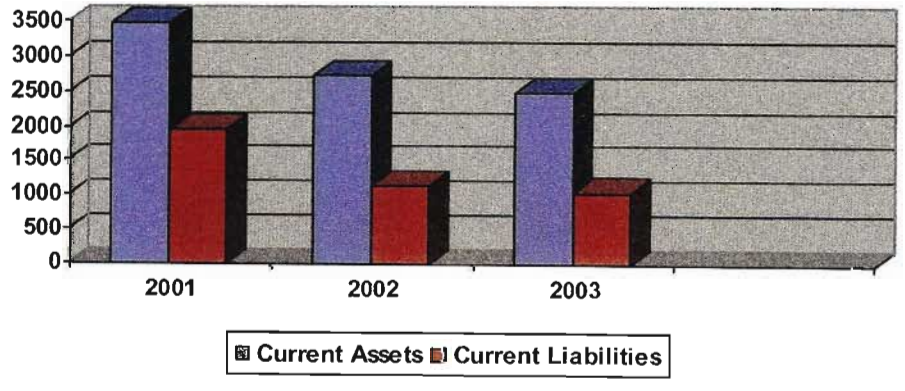
Earnings per share decreased from 2001 to 2002 and increased in 2003. However Total still increased its dividends progressively despite a decline in the share price (Figure 4.7).

Figure 4.8 Leveraging



There is a decreasing trend in the debt to equity ratio supported by a decrease in the debt and an increase in equity (Figure 4.8).

Figure 4.9 Current Assets vs. Current Liabilities



The current assets and current liabilities show a decreasing trend with decreases in both current assets and current liabilities (Figure 4.9).

4.4.1.2 Weaknesses

The employees are spread out as follows: France: 45%, rest of Europe: 27% and the rest of the world: 28% (Figure 4.10). In Europe the total workforce complement is 72% although Total is represented in every continent.

Figure 4.10
Employees by region

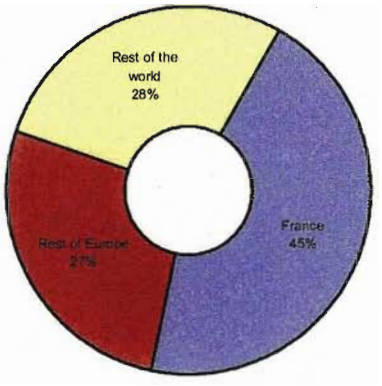
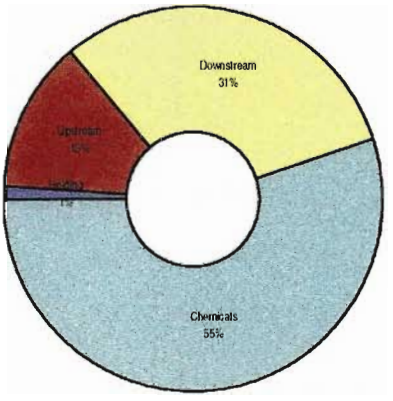


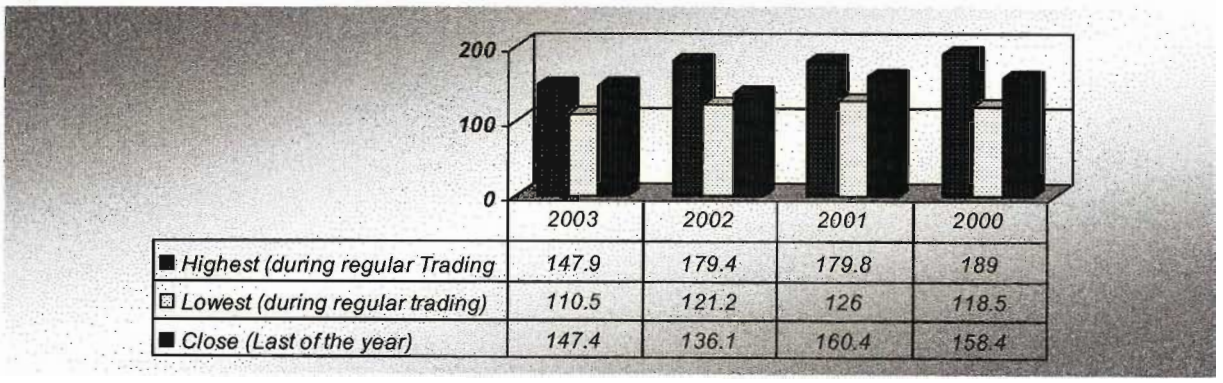
Figure 4.11
Employees by segment



The most number of employees (55%) are placed in the chemical segment, which was not the most profitable in terms of net income and ROACE (Figure 4.11). The net operating income from the chemicals segment adjusted for special items decreased by 32% in 2003 to 254M€ from 374M€.

(ii) Shares

Figure 4.12 Performance of the Share



The share price has fallen between 2000 and 2003 as shown in the graphical representation (Figure 4.12).

4.4.1.2 Opportunities

With the burst of the Internet bubble and the emergence of global villages, Total needs to phase in E-commerce as the preferred way of marketing. Consumers find it comfortable and convenient to do online shopping. The company needs to develop this channel of marketing. It is currently capitalising on the opportunity of cost savings and subsequently the procurement division has been created to demand better prices from suppliers. However there is still opportunity for improvement and enforcement.

Based on its very high innovative strength compared to the industry the company is developing numerous new products including environmentally friendly lubricants, which have attractive growth prospects. Total has opened up its operations in the fast growing Chinese market which is already the second largest single market for lubricants and has enormous untapped potential in terms of per capita consumption compared to Western markets.

4.4.1.3 Threats

Deregulation will affect the profitability, with customers supporting the company fixing the lowest price.

Strike Action can cause disruption of economic activity. This applies to both contractors and bargaining unit employees.

In terms of the recent ratings of best company to work for in South Africa, Total has moved from 67 to 94 out of 105 companies.

Economic trends, stability of the Rand verses the Dollar. The price of Oil in view of the Oil wars, America verses Iraq, supply and demand economics caused by OPEC are all threats.

On the raw materials side the company is indirectly dependent on the refinery for base oils, whose prices are linked to crude oil prices. Strong price fluctuations cannot be directly passed on to product prices. There are no daily market prices for lubricants and prices depend more on the selling price at the output and processing stages.

Political instability and changes in host government policies are also forms of threat.

Fossil fuel is a limited resource and first movers with substitute products can penetrate the market and capitalise on market shares.

4.4.2 Organisation Culture

Total is a large multinational petroleum company with the parent company located in France. The French culture is dominant throughout its subsidiaries being preserved by company directors the majority of whom are French nationals. However gradual transformation is

taking place where the company is subscribing to the philosophy of "think global and act local" recognising and respecting host government, culture and policies. The South African director is Philip Jordan hailing from the UK and he is married to a French women. The Deputy Director is Shuenyane Morakile who is South African, a Harvard graduate who is earmarked to take over the reigns from Philip. The organisational culture is keeping pace with the fast changing competitive environment especially in view of its progressive nature. The prevailing culture supports and drives the actions necessary to achieve the organisation's strategic goals maximising its ability to attain its strategic objectives.

4.4.3 Mission and Vision

Total's mission statement communicates its core purpose, core values and visionary goals of being a multinational energy company, which is committed to innovation, and providing a sustainable response to humankind's energy requirements. It conducts its business to the highest standard of professional behaviour, displaying transparency and having respect for others. In terms of its business vision, it is strategically dedicated to meeting the challenges faced by all of its business when developing natural resources, protecting the environment, integrating its operations into host country cultures, and dialoguing with civil society". The mission statement clear spells outs its business definition of being a multinational energy company and not just a petroleum company.

4.4.4 Competencies

Total engages in all aspects of petroleum industry including upstream operations (oil and gas exploration, development and production, LNG): downstream operations (refining, marketing, trading and shipping of crude oil and petrochemical products). It also produces base chemicals & polymers, intermediates and performance polymers and specialty chemicals for industrial and consumer use. In addition, Total has interests in coal mining and in the cogeneration and electricity sectors.

4.4.5 Strategies, Strategic Intent and Objectives

Strategy 1. The company's strategy in upstream is to grow exploration and production activities, including reinforcing its position as one of the leaders in the worldwide natural gas and LNG market.

Strategy 2. In downstream the strategy is to consolidate its market position in Europe, while developing its interests in high growth markets (such as the Mediterranean basin, Africa and Asia).

Strategy 3. In chemicals it is to rationalise by giving priority to improving profitability and expanding base chemicals operations and creating a new decentralised entity including the chloro chemicals. The intermediates and performance polymers businesses, destined to become a competitive and independent player.

4.4.5.1 Evaluation of Strategies

In order to formulate and adjust strategies to changing circumstances a process of evaluation is necessary.

Table 4.4 Evaluations of Strategies

Test Components	Strategy 1	Strategy 2	Strategy 3
Suitability			
Does it exploit opportunities in the environment and avoid threats	√	√	√
Does it capitalise on the organisations strength and core competences and avoids/remedies weakness	√	√	√
Does it address the political and cultural context	√	√	√
Acceptability			
Return: Profitability e.g. ROACE	√	√	√
Risk: Gearing and Liquidity	√	√	√
Feasibility			
Has the Organisation and Resources to deliver the strategy?	√	√	√

The evaluation of strategies (Table 4.4) in terms of suitability, acceptability and feasibility was based on various analysis conducted including macro environment analysis, industry analysis, internal analysis, organisation culture, operational efficiency, mission, vision, leadership, core competencies and financial metrics.

Total set up ambitious objectives for growth, synergies, and productivity. These were achieved through the mergers. Total set new performance for the period 2004-2008, a 4%

average annual growth rate for hydrocarbon production while continuing to improve returns for the Group in a constant manner.

In 2003 the company set out the following objective vis-à-vis sustainable development best practice:

- To continue to identify: issues, challenges and dilemmas faced by Total companies and units.
- To test the dissemination of best practice through pilot projects and develop appropriate guidelines and management and reporting systems.
- To strengthen its partnership approach in its initiatives to support local communities in developing countries.
- To extend and broaden dialogue with people living near its facilities in Europe.
- To step up initiatives taken in response to climate change issues and challenges related to its operations.
- To systematically build employee awareness of and training in sustainable development.

4.4.6 Leadership

Thierry Desmarest is the Chairman and CEO of the group and Total S.A. Here is innovative and can be classified as a risk taker. His knowledge and expertise has resulted in the growth of the parent company mobilising it from the fifth to the fourth position in the world. The financial and corporate social responsibility indicators are indicative of his achievement. He is open, honest and ever ready to answer questions asked by the media and stakeholders. The group employees can most certainly be proud to be under the leadership of such a dedicated visionary.

4.4.7 Best Practice

Total has promoted best practices that include social accountability, surveys and results, health, safety, environmental and quality.

4.4.7.1 Promoting Best Practice

One of Total's priorities today is to integrate front-line initiatives into a more organised approach, reflected in:

- Corporate and business-wide commitments.
- Appropriate guidelines and management systems.

- Reporting systems that are uniform and verifiable across the Group.

These policies will allow the Upstream, Downstream and Chemicals businesses to deploy their action plans in line with the specific features of their businesses, while ensuring the consistency required at corporate level.

"Our tens of thousands of employees are, and will remain, the key players in this process. Success will depend not only on our ability to innovate technologically, but also on our ability to dialogue and meet the expectations of civil society". Thierry Desmarest Chairman and Chief Executive Officer – Total

4.4.7.2 Social Accountability

Total has deployed Social Accountability 8000 (SA 8000) certification to assure customers that its products are manufactured under irreproachable working conditions, in compliance with national and local legislation and with International Labour Organisation conventions, the Universal Declaration of Human Rights and the United Nations Convention on the Rights of the Child. The Ugandan subsidiary was the first of its units to obtain certification and this is being broadened to other subsidiaries in emerging countries through advice by Bureau Veritas.

4.4.7.3 Surveys and Results

In 2002, the company commissioned pollster Sofres to survey a large sample of 4,000 people in France on the importance of the industrial risk, the perception of the reliability of the chemical industry, responsibilities and the quality of risk prevention, and the credibility of players.

The nation-wide surveys revealed that:

- There is concern about industrial risk which is perceived as less important than delinquency, but as more of a threat than unemployment.
- There is little trust in manufacturers, political officials and the media, the players they deem responsible for monitoring safety and providing information about risks.
- The chemical industry is viewed negatively with most respondents believing it is less safe than the nuclear and oil industries.

The local surveys revealed the following:

- There is a lack of information about plant processes and purpose.

- Residents are deeply attached to the sustainability of operations, which are credited as the source of regional prosperity.
- Local information initiatives are successful when conducted over the long term.

The results of these surveys were made available to employees and the media serving as a basis for the managers to develop systematic communication plans and specific actions.

4.4.7.4 Health

The Group established a health policy, which ensures that medical services are available for its employees throughout its operations. In 2002, Total doctors conducted 37 health audits in 54 companies, spending 230 man-days assessing systems and drafting recommendations. The company expanded its health policy in several areas and initiatives include:

- The upgrading of its workplace health policy to strengthen the occupational medicine program focusing on individuals, and the industrial hygiene program, by taking an integrated approach to monitoring populations and assessing risks.
- Incorporating epidemiological and public health components into its sustainable development strategy, especially studies of health impacts for people living near its facilities.
- Stressing public health expertise benefit to employees, their families and the populations concerned, where adequate infrastructure is lacking.

The Total Medical Advisory Committee was responsible for establishing these initiatives.

The company provides expatriate employees with annual medical checkups and worldwide coverage of medical costs for them and their families. In addition it contributed to a number of healthcare and education projects. When investing in foreign countries it respects the host country laws, regulations, principles and resolutions of the United Nations and other regulatory bodies.

4.4.7.5 Safety

In South Africa there were a number of accidents relating to the use of paraffin and paraffin stoves including deaths arising out of paraffin consumption. This prompted TSA and the Paraffin Safety Association of South Africa (Pasasa) to embark on a project called Kleen Paraffin to make the use of paraffin safer. The project aimed at eliminating the use of unsuitable and dangerous containers such as empty plastic cool drink bottles for the decanting of paraffin. The Paraffin project developed special dedicated containers in which pre-packaged paraffin could be supplied.

The use of the pre-packaged containers ensures that the use of paraffin is much safer and also eliminates the risk that children will drink paraffin thinking that it is cool drink. The containers have a childproof safety cap that will prevent children from accidentally opening the container.

The Group's safety performance is being improved by reinforcing its safety management system, with special emphasis on extensive sharing of best practices and new performance measurement tools. The Group's aim is to be among the best in class across all its operations.

4.4.7.6 Environmental

The ISO 14001 rating is an international standard that specifies requirements for an environmental management system. The rating covers areas such as national and international environmental and health legislation, safety, ecology, pollution, waste disposal and the sustainable use of natural resources. The Lube Manufacturing Plant and the Island View Terminal in South Africa have obtained ISO 14001 certification and fuel and lube depots will soon be heading in this direction.

4.4.7.7 Quality

The lubricant manufacturing plant in South Africa carries the ISO 9001 certification for quality management system. This ensures continuous improvement in product quality.

4.5 Sustainable Development

The company has created a Sustainable Development and Environment Division whose mission is to ensure that the societal and environmental components of the sustainable development process are applied systematically. Consistent reporting procedures have been introduced across its businesses to provide detailed pictures of initiatives undertaken and to enhance experience sharing. As a component of its broader corporate responsibilities it has identified and contributed solutions to minimise the environmental impact of its operations and products.

Total contributes to sustainable development through its businesses, operations and skills. The groups operating division have articulated their commitment in five major areas (Table 4.5): Leveraging oil and gas resources, Developing new energies, Improving products and their use, Integrating operations into the local community, and Promoting sustainable development.

Table 4.5 The Themes that the Group wants to Pursue in each Area.

 **Integrating Operations into Local Communities**	 **Leveraging oil And gas Resources**	 **Developing renewable Energy**	 **Improving Products and their Use**	 **Reducing our Environmental Footprint**
Local Economy	Heavy Oil	Hydrogen And Fuel Cells	Innovative Materials	Managing Greenhouse Gases
Cultural Diversity	Deep Offshore	Solar Power	Advanced Lubricants	Rehabilitating Work Sites
Education & Training	Getting Gas to Market	Wind Power	Improved Fuels	Production Water
Health & Safety	Discovery & Recovery	Bio Fuels	Added – Value Services	Reducing Discharges
Product Transport	Production Processes	Energy Management	Product Life Cycle	Bio Diversity
Society	**Business (Economy)**			**Environment**

4.5.1 Leveraging oil and gas resources

Oil and gas supplies is essential for both present and future generations and their optimal recovery is essential in terms of their limited quantities and is dependent upon advanced technologies. The use of efficient technologies has helped to reduce the dependence on carbon-intensive sources, such as coal, for power generation. Total has been active in trying to leverage oil and gas reserves.

4.5.1.1 Developing Extra-Heavy Crude Oil

The Orinoco belt in Venezuela and the Athabasca oil sands in western Canada contain vast amounts of heavy, viscous oil that is nearly immobile in the reservoir, which makes it difficult to produce. Since 1997, Total has led the Sincor project in Venezuela to extract some

200,000 barrels of viscous crude oil a day from sand reservoirs through cold production by diluting the oil with naphtha and transporting it via pipeline to the processing plant.

4.5.1.2 Deepwater and Ultra-Deepwater Developments

Deepwater (water depth of 500 to 1,500 metres) and ultra-deepwater (1,500 to 3,000 metres) resources account for an estimated 6% of world oil reserves, excluding heavy oil. Total has developed competencies through the use of sophisticated technologies for both deepwater and ultra deepwater developments e.g. in Angola's Girassol field (1400m) and the Gulf of Mexico (2200m).

4.5.2 Developing New Energies

Total is playing an active role in developing new sources of energy to gradually supplement hydrocarbon resources through technological advances. The Group is a European leader in marketing liquid bio fuels derived from ethanol and rapeseed esters. It is also developing wind power projects and increasing its presence in solar energy.

4.5.2.1 Photovoltaic Solar Energy

Two projects of this type were launched in 2002, with the creation of local companies for the supply of electricity in Morocco over a period of four years and secondly in South Africa's KwaZulu/Natal province over a period of three years.

4.5.2.2 Wind Power

Total has installed five latest-generation wind turbines at its Mardyck refinery near Dunkirk, France with a capacity of 12 MW, equivalent to the annual consumption of 15,000 households.

4.5.2.3 Exploring New Technologies

Fuel cells continuously convert a mixture of hydrogen and oxygen into electricity. Total has explored this energy source as a producer and retailer of automotive fuels, as well as a specialty chemicals producer. In Germany, Total operates one of the most advanced refineries of this type in Europe. Methanol and hydrogen are candidates to power fuel cell vehicles, when they become commercial in a decade or two.

4.5.3 Improving Products and Their Use

Total strives to tailor product performance to the challenges of sustainable development across the life cycle when making technical, strategic and marketing decisions.

4.5.3.1 Environmentally Friendly Fuels

The company is aware of the environmental stakes of today for a better tomorrow and thus it has provided high-quality unleaded fuels, e.g. in South Africa:

- Total Unleaded 95 is available up to 1200m above the level of the sea and has as an octane level (95) adapted to the low altitude.
- Total Unleaded 93 is available above 1200m above sea level and has a lower octane level for high altitude.

Eco Diesel, which contains sulphur levels not exceeding 0.3% and Eco Diesel Plus which contains 0.05% has been introduced in South Africa and Total, was the first petroleum company in Southern Africa to reduce sulphur levels by over 40%. In addition Eco Boost is being used as multi purpose diesel additive, which is designed to improve combustion and thus being less harmful to the environment. Total is the only company in France to produce ETBE that is blended with gasoline in order to meet the octane number, low volatility and simultaneously reducing emissions of carbon monoxide and unburned components.

To enhance air quality and to set the most stringent environmental standards for automotive fuel in the United States, it offers the Eco Diesel range of products. Xéol is a very low sulphur fuel (0.005%) that reduces unburned components by more than 90% when combined with a particle filter. Total developed Xeol for use in vehicles retrofitted with particle traps, for certain trucks and buses equipped with older engines, and Aquazole, a water and diesel emulsion that can reduce NOx (which contributes to smog formation), particles and smoke from older engines in bus fleets. Rapeseed diesels are automotive diesels that contain between 5 and 30% rapeseed oil methyl ester, a bio fuel. Total has installed fuel vapour recovery equipment at its depots and service stations. An example is gas pump nozzles that capture vapours that escape when drivers fill their tanks.

4.5.4 Integrating Operations into Local Communities

It has forged sustainable relations with host communities by emphasising communication and support to local development in the areas of healthcare, education and economic development. Total provides support to populations that, for various reasons, have great difficulty in finding employment and continuing their careers. In France it has been involved for several years in a

"jobs for youth" initiative that helps young people without skills, and who in some cases are struggling to find a place in society, to complete training in order to prepare them for a position within the group. The program, introduced in 1994, has helped 650 young people in positions ranging from service station sales associates to tanker delivery drivers and depot logistics workers. Total UK is a Gold Card member of the Employers Forum on Disability. In Africa, the Group has for decades applied a consistent policy of identifying potential entrepreneurs in disadvantaged communities to train and empower them as service station operators. This practice has been implemented in South Africa for 40 years, e.g. today, 150 Total service stations are owned and/or operated by local business people. Total has created an educational kit entitled "Learning to understand the environment: marine pollution". This free educational material is intended for physics, chemistry and biology teachers in high schools and contains numerous slides and a poster. In the 2002 World Summit on Sustainable Development, Total was the sole supplier of fuel to foreign aircraft including to those, which transported, the American Secretary of State, Colin Powell and the British Prime Minister, Tony Blair.

Total's has been involved in the following conservation projects with the Kruger National Park since 1958:

- Sponsored the relocation of white rhino from the Umfolozi Game Park to the Kruger National Park in 1961
- Sponsored the relocation of hippo's from the Kruger Park to the Addo Reserve in 1961
- Sponsored the relocation of eight elephants from Kruger to Hluhluwe in 1983
- Assisted to have the extinct Mofhartebeest re-introduced to the Kruger from Malawi in 1985
- Assisted with the funding of a feasibility study to establish wetlands near Skukuza
- Donated funds for the Elephant museum at Skukuza and donated an elephant statue
- Was a partner in the centennial celebrations of the Kruger National Park
- Provided funds to produce a video on the anthrax problem

4.5.5 Promoting Sustainable Development

This is being achieved through controlling and curbing greenhouse gas (GHG) emissions, reducing releases and emissions of pollutants, carefully managing the water cycle, rehabilitating industrial sites and protecting biodiversity. The evaluation will highlight sustainable initiatives taken on air, water and land (Internet 5).

4.5.5.1 Air

Total is embarking on actions to limit GHG which include improving the efficiency of industrial processes and investing in cogeneration facilities, reducing flaring associated gas, participating in voluntary market-based initiatives such as emissions trading and clean development mechanisms, and promoting technological advances in carbon sequestration, fuel cells and renewable energies. Total's emissions were cut by 22% between 1990 and 2002, primarily due to improvements in the chemicals business. Sour gas accounts for nearly a third of the world's natural gas reserves. However, it contains undesirable components such as carbon dioxide, hydrogen sulphide and mercaptans that make development difficult and expensive, or even impossible. Total has launched a major research program on new configurations and processes to treat sour gas in order to meet future needs cost effectively while minimising the environmental impact of this activity.

4.5.5.2 Water

Freshwater is a scarce resource and could very well become the major issue of the 21st century. At present many people do not have access to drinking water, and the growing shortage is already a source of conflict. Total has taken measures to educate people on how to save water.

Total conserves its water resources by careful management and is achieved through closed loop systems and by recycling. The polypropylene production plant in Feluy, Belgium, illustrates this principle, although the production capacity was increased to 810,000 metric tonnes a year from 430,000 metric tonnes, water consumption increased only 10%. The Exploration & Production business has launched a vast program to reduce the hydrocarbon content of its wastewater discharges to 40 mg/l in 2005 from 85 mg/l in 2001, in an effort to reduce the impact of its activities on the environment.

In 1999, Atofina committed to a 33 percent reduction in discharges into water of 21 "priority" substances-selected on the basis of their eco-toxicity-by 2002. However, some of the required investment was delayed, which resulted in a full-year reduction of 26 percent, rather than the targeted 33 percent. The process improvements have now been completed and the original objective was achieved in early 2003.

(i) Sea Water

Total ensures that its vessels are well maintained and equipped prior to charter through the use of a database. In 2002 the European Quality Shipping Information System (EQUASIS) database was created, which centralised the results of vessel inspections performed by European states during the passage of ships in their ports. Total uses this data to supplement the systems described above.

After the sinking of the Erika oil tanker in 1999, the company developed a criteria used for chartering vessels, becoming the first oil company to apply a 20-year age limit to vessels over 80,000 tonnes and a 25-year limit on others. It further strengthened measures in 2002, when the 20-year age limit applied to all vessels over 30,000 tonnes. In addition ships over 15 years old were prohibited from carrying heavy fuel oil (other than for port bunkering). Total played an active role in getting EU authorities to pass stricter regulations that would encourage greater transparency and accountability on the part of classification societies and provide for better compensation procedures by making all participants more responsible.

(ii) Treatment of Drill Cuttings in the Caspian Sea

The drilling operations in the Caspian Sea present a real technical and cost challenge due to the area's sensitive ecosystem, shallow waters and the sea is frozen five months of the year. Cuttings are brought onshore for treatment using thermal de-sorption technology, in which the fluid is flashed off. "Solutions include storage in a protected site or salt stabilisation so no contaminants leach into the environment".

(iii) Site Restoration

Total carries out environmental impact assessment of its industrial facility nearing the end of the life irrespective if it is going to be relinquished, sold or restored. Due to the wide range of its operations, it faces a large variety of rehabilitation work, e.g. the decommissioning North Sea Frigg field in Norway. The Vendin-le-vieil plant in northern France had been dedicated to coal-based chemicals for 75 years. Its decommissioning was completed at the end of 2000. Phase 1 of the site's remediation included the incineration of 9,500 metric tonnes of residue and asbestos. During 2001, work continued with the treatment of 85,000 metric tonnes of rubble, including 50,000 metric tonnes of contaminated rubble.

(iv) Remediation of a Natural Lagoon in Spain

Total's Spanish subsidiary, Cepsa, restored a lagoon located on the grounds of its Huelva refinery, not used in the industrial process, as part of an environmental impact study. The area is of geomorphic interest and is home to a number of protected natural species. Consequently, scientists were invited to advice on its rehabilitation in order to safeguard the ecosystem and better integrate the site into Huelva's tourist area. Islets were created to provide a suitable, quiet habitat for the fauna, while new plants consolidated the indigenous vegetation. Cepsa opened this area to the public and now runs an educational program there. A combined tour of the refinery and the lagoon shows how industry and the environment can coexist harmoniously.

(v) Aerial and Sub Sea Detection of Submerged Hydrocarbons

The company has supported the use of acoustic imaging systems and sonar techniques to detect submerged oil slicks as opposed to traditional diving and dredging methods, which are less efficient. Total has also participated in projects to expand scientific knowledge, protect endangered species and ecosystems, especially marine, and raise public awareness and information.

(vi) Decommissioning the Largest Steel Platform in The North Sea

The first fields to be brought on stream in the North Sea are now being depleted, and a number of structures are nearing the end of their operating lives. Several major steps were taken in 2001 regarding the future of three large installations either operated by total or in which it has significant interests. The installations date back more than 20 years, when little attention was paid to the future of decommissioned installations because people were confident that future generations would be able to deal with the problem. The main structure on the Maureen field was the largest steel platform ever erected in the North Sea. It was removed from its original site in June 2001. Despite great uncertainty about the feasibility of this unprecedented project, the 110,000 metric ton structure was towed to the main structure of the Maureen field to a fjord in Norway for use as a dock.

4.5.5.3 Ground

The first step in any industrial project is to carry out an environmental impact assessment. Aspects to be surveyed include flora, fauna, freshwater or seawater, ground conditions and cultural monuments. Near the end of the projects life the environment must be restored to a

condition that will allow it to be re-used for other purposes. Total has shown interest in developing new technologies to deal with the vast variety of sites needing to be treated.

(i) Cleaning up the Tundra with Inipol

Inipol is being tried out in Russia, where the group proposed and is testing its use to remediate a vast area polluted by hydrocarbons. The public authorities in that country are focusing on protecting the environment and repairing the damage caused by overproduction of Russian fields at the end of the Soviet era, which has attracted particular attention from European environmentalists. Total is a major purchaser of Russian crude, in particular for the Leuna Refinery in Germany. An initial test was conducted in summer 2002 in the Komi Republic, where the group used an inipol product particularly suited to cold climate applications on an area of contaminated tundra.

(ii) Preventing Soil Erosion in Bolivia

In the Chaco region of Bolivia, near the Argentine border an area destined to become a gas production underwent remediation to prevent erosion, which is a serious problem in this rough terrain due to heavy tropical downpours in the summer months. After extensive preparation and the addition of 30cm of arable soil, five hectares were replanted before the start of the rainy season. The pre-emptive restoration of the vegetation prevented irreversible damage to the site.

(iii) Bio Diversity

Total put biodiversity in the depth of its policy of sustainable development. The focus of the Total Corporate Foundation for biodiversity and the sea was on the protection of coastal ecosystems. The main actions of the Foundation were: The support of projects, which were likely to advance scientific knowledge of coastal ecosystems through three major thrusts: islands, coral reefs and mangroves. Its aim was to acquire scientific knowledge to further research efforts, protect fragile ecosystems and help to preserve marine biodiversity. The Foundation broadened its activity to restore the ecosystems on the French Atlantic Coast following the "Erika" sinking. After the clean-up operations were completed, funds were channelled towards projects selected by a group of scientific experts in conjunction with representatives of local communities.

- First aid and transit stations were set up to care for birds affected by oil spills, together with the Nantes Veterinary School;

- Studies at protecting and restoring ecological balance following a marine oil spill, together with France's Marine Pollution Study Centre (CEDRE);
- The reintroduction of seabirds on the islands and reefs of the Atlantic seaboard,
- Efforts to restock the Loire basin with salmon;

(iv) Protecting Marine Prairies

Total has formed a partnership with Port-Cros National Park and is protecting the lush Posidonia Prairies thriving in its waters. Pleasure craft throw anchors in these waters causing damage to the sea floor. Experiments are being conducted on anchor systems to remove these destructive effects. There are information signs, along the shores of the island, for underwater discovery trail, which offers the opportunity to learn more about these treasures. The Park has also initiated a program to study the impact of scuba diving on sensitive environments. This study will monitor and compare the development of species that are key indicators of the health of the local ecosystem. The Foundation has provided support for international coral reef program involving eight themes:

- The furthering of biodiversity knowledge in New-Caledonia, Polynesia, and Philippines
- Genetic diversity of the coral population in Australia and Polynesia
- Cultural perception of coral ecosystem biodiversity by the local population in Kiribati and Philippines
- Economic interest of biodiversity in Philippines and Vietnam
- Reef biodiversity monitoring in relation to climate change in Polynesia
- Role of protected coral zones in preserving biodiversity in Samoa and Indonesia
- Reef zone restoration in Mauritius
- Study of the white death phenomenon in Seychelles

Mangrove biodiversity studies are being supported by the Foundation in the Indonesia's Mahakam delta. This study is the prelude to setting up a Mangrove Reserve. An in-depth study is necessary due to the variations in the ecological conditions observed in this forest ecosystem.

4.5.5.4 Waste Management

In Africa, Total has developed a process for treating used oil that successfully addresses local conditions. The unit, called Ecolub, is the only one of its kind in Africa and is designed to respond to the continent's growing environmental concerns. Because the oil to be treated

exists in small quantities throughout the region, it was decided to install a small-scale facility on the premises of Société Camerounaise de Dépôt Pétrolier, in Douala, Cameroon. Ecolub is not a regeneration unit, instead, it recycles used oil, which is then mixed with heavy fuel oil and supplied as heating oil to local customers such as cement manufacturers.

4.5.5.5 Turning Waste into Road Building Materials in Texas

One of the keys to site remediation at the former Col-Tex refinery in Colorado City, Texas, lies in the rehabilitation of the 32 settling ponds containing waste from the plant. Lone Wolf Resources, a joint venture between Total and Chevron Environmental Management Company, investigated alternatives to land filling for the waste. A recycling plan to convert waste into water based asphalt emulsion and a substrate for highways was developed. They were approved for use and production began in 2000.

4.5.5.6 Recycling Toner Cartridges in France

Staff at Total's offices in La Défense, on the outskirts of Paris, is making an original contribution to waste recycling by collecting used printer and fax cartridges. These are then sent for reconditioning to Les Courlis, a workshop that employs the disabled, and Handi Terre, a non-profit group that helps find work for the disadvantaged. Each cartridge recovered equals an hour of work. The program has helped educate personnel about the need to protect the environment while providing support for the disabled and the disadvantaged.

4.5.6 Sustainable Development Metrics Indicators

Figure 4.13

NO_x '000 metric tonnes per year

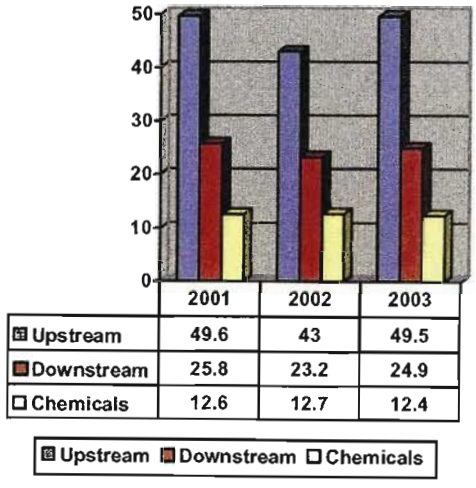
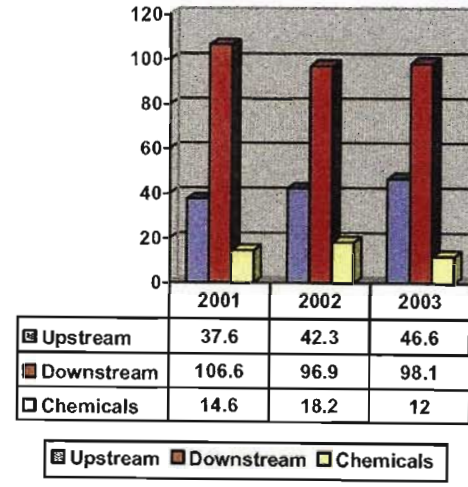


Figure 4.14

SO_2 '000 metric tonnes per year



The corporate social responsibility indicators reveal that there has been an increase in the discharge of oxides of nitrogen between 2002 and 2003 in the upstream and downstream segments of 15.12% and 7.33 % respectively (Figure 4.13). The chemicals segment showed a decrease of 2.36% for the same period. Sulphur dioxides showed increases of 10.17 % in the upstream and 1.24 % in the downstream segment and the chemicals segment showed a decrease of 34% (Figure 4.14).

Figure 4.15

VOC '000 metric tonnes per year

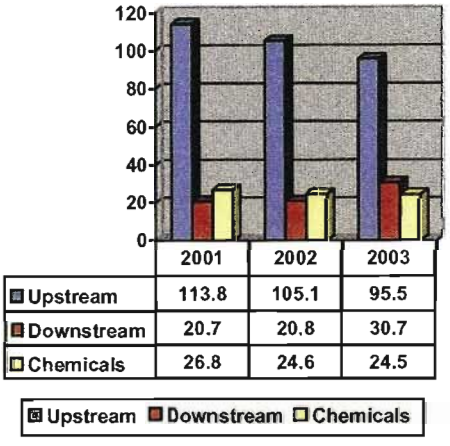
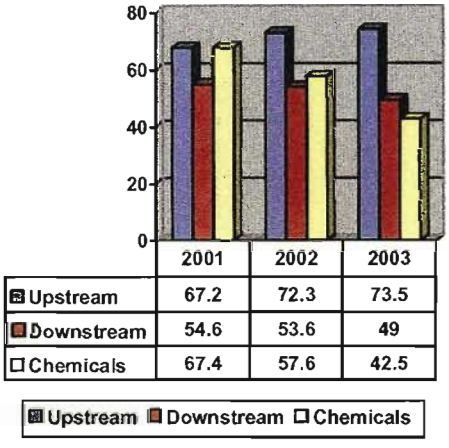


Figure 4.16

Water Releases Mcu.m/year



There was a decrease in the release of volatile organic compounds (VOC) in the upstream and chemicals segments and an increase in the downstream segment (Figure 4.15). In the upstream and chemical segments there were decreases of 9.13% and 0,4% recorded between 2002 and 2003. On the contrary the downstream showed a major increase of 47.6%.

Water release in the upstream segment shows an increasing trend, however there is a decreasing trend in the downstream and chemicals segment (Figure 4.16). The downstream and chemical segments showed consumption decreases of 8.58% and 26.22 % between 2002 and 2003. There was an increase of 1.66% in the upstream segment.

Suspended solids in the downstream segment are consistent and the chemicals segment showed decreasing trends between 2002 and 2003 (Figure 4.17). The down stream segment remained constant between 2002 and 2003, an improvement compared to an increase of 14.29% between 2001 and 2002. In the chemical segment there was a decrease of 7.14% between 2002 and 2003.

Figure 4.17

Suspended Solids Release

'000 metric tonnes per year

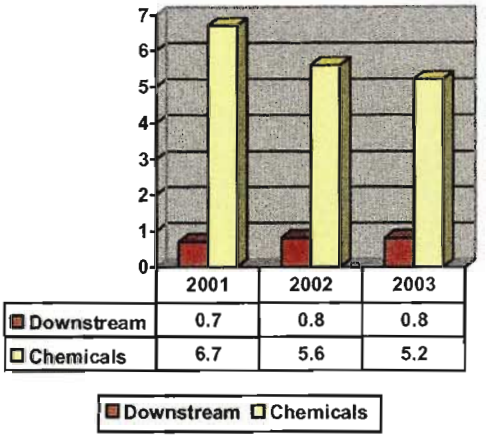
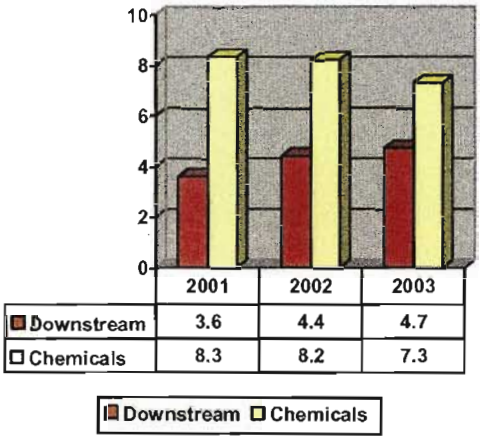


Figure 4.18

Chemical Oxygen Demand Release

'000 metric tonnes per year



The chemical oxygen demand (COD) shows an upward trend in the downstream segment and downwards in the chemicals (Figure 4.18). There was an increase of 6.82% in COD release between 2002 and 2003 in the downstream segment, an improvement compared to 22.22 between 2002 and 2001. In the chemicals segment there was a decrease of 1.20% between 2002 and 2001 and a substantial decrease of 10.98% between 2003 and 2002.

Figure 4.19

Greenhouse Gases (GHG)

MTCDE per year

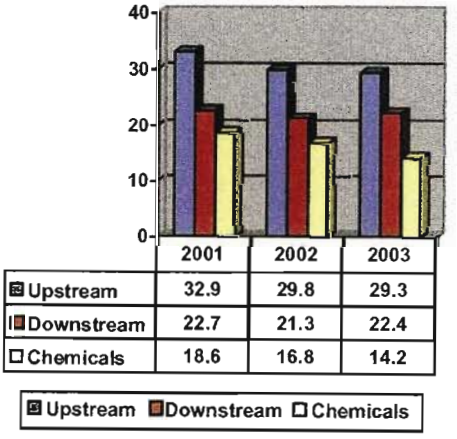
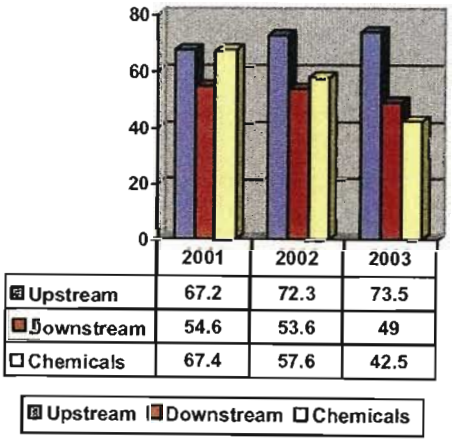


Figure 4.20

Energy Consumption

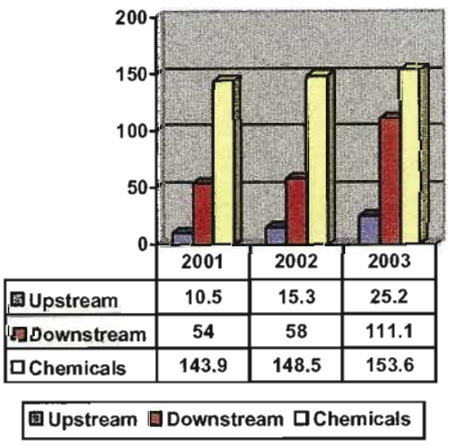
Mtoe per year



There is a decreasing trend for GHG in all three segments (Figure 4.19). The upstream and chemical segments showed decreases of 1.68% and 15.48% respectively between 2002 and 2003. The downstream segment showed an increase of 5.16% for the same period.

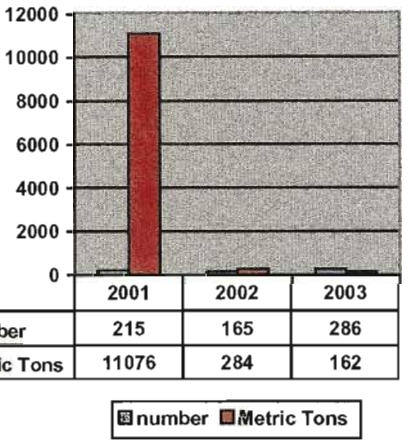
Energy consumption has decreased in the downstream and chemicals segment between 2001 and 2003. In the upstream segment there is a slight increase (Figure 4.20). In the upstream segment there was an increase of 1.66% between 2002 and 2003, which was lower, compared to an increase of 7.59% between 2001 and 2002. The downstream and chemical segments showed decreases of 8.58 and 26.22% respectively.

Figure 4.21
Hazardous Waste Production
'000 metric tonnes per year



	2001	2002	2003
Upstream	10.5	15.3	25.2
Downstream	54	58	111.1
Chemicals	143.9	148.5	153.6

Figure 4.22
E & P oil spills
metric tonnes per year



	2001	2002	2003
number	215	165	286
Metric Tons	11076	284	162

The results for hazardous waste do not paint a very good picture, as there were increases across all three segments between 2001 and 2003 (Figure 4.21). The upstream, downstream and chemical segments showed corresponding increases of hazardous waste production between 2002 and 2003 of 64.71%, 91.55% and 3.43% respectively. The respective figures between 2001 and 2002 in the upstream, downstream and chemical segments were 45.71%, 7.41% and 3.2%.

The results in number and in metric tonnes are commendable for E & P oil spills across all three years. This is combination of all segments (Figure 4.22). The exploration and production oil spills increased in number between 2002 and 2003 yet there was a decrease of 43% in terms metric tonnes. The reporting process broadened in the upstream segment explaining the increase in number of occurrences in 2003.

The Group average for all business in total recordable incident rate (TRIR) decreased by 1.9 incidents with or without lost time per million man-hours worked between 2002 and 2003. Similarly the lost time incident frequency reduced by 0.9 hours per million man-hours worked (20.9%) for the same period.

The company spent 11.7 million euros in 2003 for health care and social support, an increase of 11.42% compared to 2002.

4.6 Conclusion

Evaluation was initiated from the macro environment with particular focus on political, economic, social, technological, ecological, and legal analysis. The macro environment analysis has been significant to this study as its components intersect with those of sustainable development.

Hereafter industry environment was discussed emphasising the forces that drive the petroleum industry and culminating with the Five Force analysis and Porter's Diamond. The internal environment analysis discussed the company's strengths, weaknesses, opportunities and threats. Inherent competencies such as leadership best practices and strategies also formed part of the analysis. Total's current strategies were subjected to analysis using the model developed by Johnson and Scholes, that is, suitability, acceptability and feasibility.

This was followed by the evaluation of Total's sustainable development initiatives including its current strategies, citing examples of the company's contribution to this field. Finally the graphical representations of the key corporate social responsibility indicators over the period 2001 to 2003 were presented.

Sustainable development has become an integral part of the group's corporate culture and is seen as a basic element of its business and not as a constraint, and it subsequently hopes to contribute to a better world to live in, for both the present and for future generations.

Chapter 5 will discuss the recommendations and conclusions of the study, and good performance will be praised and shortcomings will be highlighted.

Chapter 5: Recommendations and Conclusions

5.1 Introduction

To maximise competitiveness it is essential for strategists to carry out an intensive exploration of the macro, industry and internal environments. The term environment has been very crucial to this study forming the link between sustainable development and strategic management as depicted on the model at the end of chapter 2. Due to the rapid changing business environments there will always be a gap between 'planned' and 'realised' strategies thus stressing the need for organisations to be flexible to change and adapt their strategies accordingly.

Chapter 1 presented an overview of the proposed research, including the background, relevant theory on strategic management and sustainable development, motivation to carry out the research, the value it accorded to the organisation, the development of the problem statement, formulation of objectives, the research design, limitations, and conclusion.

Chapter 2 painted the ideal picture of what the organisation should be doing in terms of strategic management and sustainable development. Here the highlights were the theoretical aspects of strategic management and sustainable development, supported by models relevant to the industry under study, theory and evolution of sustainable development by various authors and institutions. The layout took the form of identifying key ingredients that ensured the success of any business, typically components of strategic management.

Chapter 3 presented the case study of Total and focused on the strategic areas including the discussion of the company's sustainable development initiatives. The case study of Total was presented spanning the head office in Paris and the South African subsidiary. The focus areas were company history, financial information, strategies, sustainable development indicators, environmental, and social initiatives taken by Total. Five main areas of action were identified by Total: leveraging oil and gas resources, developing new energies, improving products and their use, integrating operations into the local community and promoting sustainable development.

In chapter 4, the case study was evaluated against the model developed in chapter 2 where strengths and weakness were identified. Total's current strategies were evaluated using the tools and models identified in chapter 2 at France and South Africa. The macro, industry and

internal environments, internal financial and strategic planning documents, and corporate social responsibility indicators were used to evaluate the position of the company. Graphical representation of the key focus area provided insight into the progress made over the period of study.

The study was exploratory in nature and does not claim to be exhaustive and complete. This chapter will reinforce what the company has done well, identify the gaps and attempt to propose recommendations to improve the performance of the overall organisation. The problem statement and objectives will be reviewed to assess the degree of achievement. In addition the limitations identified in chapter 1 will provide the basis for further research and the vastness of this field opens up opportunities in many areas for possible future research.

5.2 Identifying Gaps

The gap analysis technique described in chapter 2 is used to assess the achievement of objectives and to better understand the dynamics of the competitive environment. Importantly, it will be used to reveal where the organisation had weaknesses and where it had strengths and to develop strategies to close it. In order to identify the gap three questions are asked: Where are we now? (Forecast), Where do we want to get to? (Objective), How do we get there? (Gap). When a gap has been identified a manager or strategist can choose to redefine the objectives, do nothing or change the strategy.

The problem statement crystallised in chapter 1 read as follows:
Have Total's strategies been successful in ensuring its business continuity, its growth and have they highlighted the importance of sustainable development in preserving the environment for present and future generations and to gain competitive advantage?

This problem statement can be dissected into three parts to ascertain the degree of achievement:

- Have the strategies ensured business continuity and growth?
- Have the strategies highlighted the importance of sustainable development?
- Has Total gained competitive advantage?

The following objectives were set in line with the problem statement:

- To evaluate Total's profitability using the tools of strategic management.

- To establish Total's compliance with sustainable development by evaluating strategies and analysing key performance indicators.
- To establish the extent to which Total contributed to sustainable development through literature research.
- To establish the link between Total's sustainable development and business strategies.

Each of these objectives will be analysed and where possible recommendations will be proposed. The evaluation of Total's financial performance will provide insight into its profitability. As stated in chapter 1, financial analysis was limited to prevent exposure of confidential information.

5.2.1 Evaluation of Total's Profitability Through Financial Analysis and Operating Highlights

The analysis discusses the trends of financial ratios that contribute to profitability, based on information that was available at the time of search. Profitability of a company's financial structure concerns management's ability to control expenses and to earn a return on invested funds. Ratios that measure profitability usually consist of a profit part and an investment part of the company of interest.

Total produced good results in 2003 recording a net income of 7.34 billion euros adjusted for special items, an increase of 17.32% over the previous year. This was good a good recovery as there was 16.73% decline between 2001 and 2002. The sales figures were 105318, 102540 and 104652 (M€) for 2001, 2002 and 2003 respectively. There was a drop of 2.7% in sales between 2001 and 2002; however, in 2003 there was an increase of 2.02% sales, which was still lower when compared to 2001 figures. The Total operating income from all segments increased by 18.27% between 2002 and 2003, with a contribution of 116% coming from the downstream segment a major turnaround as there was a decline of 69.74 between 2001 and 2002. At the same time the upstream segment showed progressive decreases of 29.04 and 28.06 during 2002 and 2003. On the contrary the chemical segment showed an increase of 3.18% between 2001 and 2002 and this was improved to 12.54 between 2002 and 2003.

Total has been the leader among the major oil companies in terms of return on capital employed: the Group's return on average capital employed (ROACE) was 19% in 2003. ROACE in Upstream was 29% in 2003. ROACE in Downstream was 15% in 2003 and in Chemical was 4%. The total expenditure decreased by 13.39 between 2002 and 2003,

supported by the upstream and downstream segments. In the chemical segment there was an increase of 11.06%. The upstream segment showed a significant decrease of 59.14%.

The current ratio was 1:1.8 in 2001, 1:2.4 in 2002 and again 1:2.4 in 2003 with corresponding decreases in the current assets and current liabilities. This ratio is an indication of company's ability to service its current obligations. The optimum ratio is 1:2 and Total met this ratio comfortably. Generally the higher the current ratio, the greater is the cushion between current obligations and the company's ability to pay them. The stronger ratio reflects Total's superiority of current assets over current liabilities. The cash flow from operating activities in millions of euros was: 12303 in 2001, 11006 in 2002 and 12487 in 2003. All three segments contributed to these profitable results and in conjunction with the current ratio shows Total is very much liquid and was ready to honour its current liabilities when due.

Leverage is the extent to which the company relies on debt as opposed to owner's capital to fund its financial requirements. A highly leveraged firm is one with a high proportion of debt relative to owner's investment. A high ratio numerical value is not always the strongest, nor is the lowest always the weakest. While interpreting the ratio values these must be evaluated in conjunction with one another for proper conclusions to be drawn. A value of 2.0 for the debt-to-equity ratio is generally considered to be the upper limit. Total obtained the following ratios: 1:2.4 in 2001, 1: 2.8 in 2003 and 1: 3.2 in 2003. These results were not only low, but also show a decreasing trend meaning that the company had a lesser reliance on borrowed funds.

The share price showed a declining trend with the highest price of 179.8€ in 2001 to 147.9€ in 2003, a drop by 21.57%. The company has managed to turn this around and at the end of May 2005, the shares once again touched the 180€ mark and is showing an upward trend. The earnings per share in euros were 10.85 in 2001, 9.4 in 2002 and 11.56 in 2003. In 2003, the board proposed the distribution of a dividend of 4.70, an increase 0.6 euros per share compared to 2002. The dividends doubled in 4 years as it declared dividends of 2.35 euros in 1999. Earnings per share decreased from 2001 to 2002 and increased in 2003. However, Total still increased its dividends progressively despite a decline in the share price.

The group pursued strong growth, undertook share buybacks and maintained a very solid balance sheet with a net-debt to equity of 26% at the end of 2003. It withstood international competition and in 2004 it was the fourth largest oil company previously occupying the fifth

position. The company had sufficient reserves to withstand sudden changes in the environment. The reserve including retained earnings in 2003 was 45 251million euros.

Each of the business segments contributed to its results: Upstream, Downstream and Chemicals. Every one of these segments was not only able to finance its own investments, but to also contribute to the Group's cash flows and to increasing dividends.

Four years ago when the European authorities approved the proposed merger operations, Total made a number of commitments regarding increased production, synergy targets, and productivity gains, all of these have been achieved.

Over a period of four years, Total's hydrocarbon production increased by 23%; significantly superior to that of major competitors who experienced a decline in their production in 2003, while Total's grew by 5%. This growth was not achieved at the expense of profitability. Total is the world's fourth largest producer of hydrocarbons, being number one in Africa and number 2 in the Middle East. In the Upstream segment, there was a 5.1% growth in the oil and gas production, which was the strongest of the major oil companies in 2003.

Financial analysis reveals much about the companies operating strengths and weaknesses serving as a basis for predicting future financial developments and answers the question of how well a strategy is working. The financial analysis indicates that Total is a profitable company and a "do nothing" strategy is proposed.

5.2.2 Establishing Total's Compliance with Sustainable Development by Evaluating and Analysing Key Performance Indicators

The concept of sustainable development embraces environmental and social concerns. Total has made in roads to realise its sustainable development target, which has been highlighted by graphical representation of key indicators in chapter 4. The indicators discussed, include emissions of nitrogen oxide ($NO_{x)}$, sulphur dioxide ($SO_{2)}$, volatile organic compounds (VOC), water release, suspended solid release, chemical oxygen demand (COD), greenhouse gases release, energy consumption, hazardous waste production, exploration and production (E& P) oil spills, safety and health.

The corporate social responsibility indicators reveal that there has been an increase in the discharge of oxides of nitrogen between 2002 and 2003 in the upstream and downstream segments of 15.12 and 7.33 % respectively. The chemicals segment showed a decrease of

2.36% for the same period. Sulphur dioxides showed similar trends where there were increases of 10.17 % in the upstream and 1.24 % in the downstream segment and the chemicals segment showed a decrease of 34%. Nitrogen oxides and sulphur dioxide contribute to the formation of smog; also causing acidification of rain and soil. These gases are produced from exhaust emissions and oil companies and automotive manufacturers must take joint measures to reduce these levels. These can be achieved by modification of the engines to manage the combustion and exhaust conditions. Sulphur dioxides are being reduced through the modification of refinery processes to produce cleaner fuels. South African examples include the phasing away of diesel containing 0.3% sulphur and replacing it with 0.05% sulphur and also the replacement of lead containing fuel at the beginning of 2006. The government controlled these projects with the intention of introducing cleaner fuels and subsequently improving the air quality.

The major sources of VOC in the oil and chemical industries are storage, loading, installation and solvent use. In the upstream and chemical segments there were decreases of 9.13% and 0,4% recorded between 2002 and 2003. On the contrary the downstream showed a major increase of 47.6%. The company also identified 16 priority VOC and targeted cuts in their emissions of third between 1999 and 2002. Previously VOC's were reduced by installation of floating roofs on storage tanks, and oxidation in catalytic converters. Systems need to be designed to recover vapour emitted during product loading at refineries and service stations. Total France started this process and pumps at certain service stations are equipped with nozzles to recover hydrocarbon vapour released during fuelling. This technology needs to be transferred to South Africa and other subsidiaries. The advantage will be reduction of hydrocarbon emissions and improvement of air quality.

The petroleum industry utilises water in refineries for heating and cooling systems, not as much compared to the farming industries. Nevertheless efficient management of this scarce resource is still required. The downstream and chemical segments showed consumption decreases of 8.58% and 26.22 % between 2002 and 2003. There was an increase of 1.66% in the upstream segment. Efficient water management can be achieved through recycling, controlling domestic use, modification of heating and cooling systems by incorporating closed loop systems. The advantages will be financial savings, reduced water consumption, and prevention of hydrocarbon leakage into rivers and potable water sources.

Suspended solids are small particles of solid pollutants that float on the surface or are suspended in sewage or other liquids. They resist removal by conventional means. A measure of the suspended solids in water is determined by laboratory tests for suspended non-filterable solids. Suspended solids released in the downstream and chemical segments showed decreasing trends between 2002 and 2003. The down stream segment remained constant between 2002 and 2003, an improvement compared to an increase of 14.29 % between 2001 and 2002. In the chemical segment there was a decrease of 7.14% between 2002 and 2003. The main sources of these particles in the petroleum industry are from the distillation and refining processes, eventually passing into the effluent stream and atmosphere. They can be minimised through the use of particle traps introduced at appropriate stages of these processes. The advantage would be compliance with environmental regulations, clean air and water and will benefit the public in terms of a healthier environment.

COD measures the amount of oxygen required to oxidise all compounds, both organic and inorganic, in water. There was an increase of 6.82% in COD release between 2002 and 2003 in the downstream segment, an improvement compared to 22.22 between 2002 and 2001. In the chemicals segment there was a decrease of 1.20% between 2002 and 2001 and a substantial decrease of 10.98% between 2003 and 2002. The oxygen levels in water bodies are important to sustain aquatic life including plants and animals and measures must be taken to minimise depletion. Tests must be carried out in laboratory on effluent samples prior to discharge into sea outfalls, sewers, rivers or water works. In the event of COD levels not complying with specification, treatment must be applied to ensure correction before discharge. The advantages will be compliance with water regulations and preservation and continuance of aquatic species.

Green house gas emissions into the atmosphere have led to global warming and include carbon dioxide, methane, hydro fluorocarbons, and nitrous oxides. The upstream and chemical segments showed decreases of 1.68% and 15.48% respectively between 2002 and 2003. The downstream segment showed an increase of 5.16% for the same period. These emissions have to be minimised and one company alone cannot achieve them. However, individual companies can contribute and together this objective can be realised globally. The Kyoto Protocol established an international framework for addressing long term issues of climate change associated with green house gases. The Protocol enshrined the principles of a

reduction in greenhouse gas emissions by 2008 to 2012 for developed countries and included mechanisms for achieving reduction and compliance.

Mankind used wood as its primary source of energy until the mid 19th century being replaced by coal and followed by oil powering of industrial processes. Total consumes approximately 17 million metric tonnes of oil equivalent of primary energy a year mainly by refineries and integrated chemicals. Energy is derived mostly from hydrocarbons and the reduction of its use is a balancing act as global economic growth generates high demands. In the upstream segment there was an increase of 1.66% between 2002 and 2003, which was lower, compared to an increase of 7.59% between 2001 and 2002. The downstream and chemical segments showed decreases of 8.58 and 26.22% respectively. The demand for energy has resulted in the group expanding its operations whilst it simultaneously deployed energy efficient technologies. The energy of the future will be use of natural gas and Total has already embarked on this route using sophisticated technology to drill the depths of the North Sea and other gas fields. Natural gas presents many advantages compared to other fossil fuels. It produces lesser carbon dioxide, nitrogen oxide virtually no sulphur, no soot and dust and therefore supports the lowering of greenhouse gases and ultimately sustainable development.

The industrial, domestic and agricultural sectors are generating increasing volume of waste, with trashcans being filled to the brim including pollution of the land, water and air. To reduce the waste mountain, households, businesses and local communities need to get into the clean up act. Waste management is an area where Total needs to focus, as the sustainability indicators do not present a very good picture. The upstream, downstream and chemical segments showed corresponding increases of hazardous waste production between 2002 and 2003 of 64.71%, 91.55% and 3.43% respectively. The respective figures between 2001 and 2002 in the upstream, downstream and chemical segments were 45.71%, 7.41% and 3.2%. Total has pledged its commitment to reducing waste generated by its operations. Programs are underway to identify opportunities for reducing waste at the source including the reuse and recycling options. Quality has to be built into all aspects of the company's operations, with things being done right first time, and defects and waste eradicated from operations through the incorporation of Total Quality Management (TQM). Important aspects of TQM include customer-driven quality, top management leadership and commitment, continuous improvement, elimination of waste, fast response, actions based on facts, employee participation, and a TQM culture (Internet 34). Elimination of waste forms a major

component of the continuous improvement approach with emphasis on prevention rather than detection. In South Africa waste oil from users such as garages, dealership, industry, farmers and others are collected by the ROSE foundations and employed safely. The advantages are compliance with waste regulations, cleaner environment including air land and water, and the elimination of unpleasant odours. Benefits include satisfied employees, consumers and support by environmental organisations such as Green Peace and Groundwork leading to competitive advantage.

Total faced its worst case of oil spill in 1999 when the Erika tanker carrying heavy fuel oil owned by its subsidiary sank into the Atlantic Ocean causing pollution and affected the coastline. The exploration and production oil spills increased in number between 2002 and 2003 yet there was a decrease of 43% in terms metric tonnes. The reporting process broadened in the upstream segment explaining the increase in number of occurrences in 2003. In order to manage spills, companies formed organisations that pooled resources with the ability to fly equipment anywhere in the world in just a few hours. Total was the founding member of Oil Spill Response Ltd. (OSRL) that has a centre in Southampton and an alliance partner in Singapore. In addition, the company set up the Fast Oil Spill Team (FOST) in Rognac combining the Group's emergency oil-spill resources for deployment with the support of a dedicated team of marine fire fighters. The Lube Manufacturing Plant in South Africa set up emergency teams and placed clean up equipment at strategic points in the plant to handle oil spills. The members have been trained and drills are conducted regularly to ensure preparedness and response. Oil spills have to be managed efficiently as they cause damage to the environment, bring bad publicity to the organisation and present financial constraint, in the case of the Erika this was in excess of 76 million euros.

Safety is of concern to all businesses that manage industrial risks related to the production and handling of hazardous substances, encompassing the protection of people on the worksite during daily operations. The safety indictors show that there was a reduction in the group average across all business for total recordable incident rate (TRIR) of 1.9 incidents with or without lost time per million man-hours worked between 2002 and 2003. Similarly the lost time incident frequency reduced by 0.9 hours per million man-hours worked (20.9%) for the same period. Incident frequency is a significant safety indicator and in 2002, Total set an objective of reducing the frequency of incidents with or without lost time by 15% a year over four years for group and contractor employees combined. To prevent and manage risks the

company disseminated a strong culture of safety setting out core principles of health, safety, environmental and quality in a charter. The explosion at the AZF plant in Toulouse, France, on September 21, 2001 prompted Total to strengthen its safety organisation and programs. The action plan included measures that confirmed managements' commitment, strengthening safety processes and practices, and improved communication and transparency. The implementation of these priorities was supported by consolidation of the internal organisation at all levels through the creation of the corporate industrial safety division in 2002 for the ongoing reinforcement of safety.

Total deals with a wide variety of health-related issues due to the diversity of its activities, the size and organisation of its companies, the types of jobs offered and local situations. Health is a core component of sustainable development and Total set up infectious disease information and prevention programs tailored to local conditions. The company spent 11.7 million euros in 2003 for health care and social support, an increase of 11.42% compared to 2002. Total's medical advisory committee developed excellent health strategies that incorporated sustainable development strategies, including the upgrading of its health policies, carrying out health impacts on people living close to its operations and stressing health benefits where infrastructure is lacking.

Rating agencies and managers of dedicated sustainability funds, track companies' economic, social and environmental performance. In 2002, Total was included in the London Stock Exchange's FTSE for good socially responsible investment index for its sustainable development track record, following an assessment performed by the UK-based Ethical Investment Research Service (EIRIS). However, it was not included in the best-of-industry index prepared by Zurich-based Sustainable Asset Management (SAM) for the New York Stock Exchange's Dow Jones Sustainability indexes or the index established by the Agence de Rating Social et Environnemental sur les Entreprises (ARESE) for French companies. Total has to work more assertively to enhance the formal expression of its sustainable development commitment, consolidate its sustainable development initiatives, and communicate more effectively on these issues prepared in line with the Global Reporting Initiative (GRI). The benefits will be greater transparency and improved social goodwill as the GRI will be available to all.

Total must be commended for showing firm commitment to sustainable development as revealed by the analysis of environmental, safety and societal indicators. The indicators show mostly decreasing trends with objectives being exceeded.

5.2.3 Analysis of Total's Sustainable Development Initiatives

The group managed the utilisation of its resources efficiently, taking into account the needs of today's consumer as well as future generations into account. It crafted strategies for sustainable development on which it regularly provided transparent reporting. The Chairman and Chief Executive Officer is at the heart of its sustainable development initiatives stating in the groups sociable responsibility report "The very nature of our oil, gas and chemicals operations has long required us to factor environmental, social and cultural parameters into our industrial projects" A review of the group's environmental, social and societal achievements shows that it was committed to sustainable development long before the concept became popular. As part of its broader corporate responsibilities, five areas of action were identified (1) Leveraging oil and gas resources, (2) Developing new energies, (3) Improving products and their use, (4) Integrating operations into local communities and (5) Promoting sustainable developments.

5.2.3.1 Leveraging Oil and Gas Resources

Oil and gas supplies is essential for both present and future generations and their optimal recovery is essential in terms of their limited quantities and is dependent upon advanced technologies. Total has been active in trying to leverage oil and gas reserves through the use of efficient technologies to reduce the dependence on carbon-intensive sources, such as coal, for power generation. In order to survive the turbulent and competitive environments, companies need to improve efficiencies and in the petroleum sector, innovation and adoption of the latest technology is a requisite, for example, the use of information technology, 3-D seismic surveying, production control systems and video conferencing. The company supported the use of acoustic imaging systems and sonar techniques to detect submerged oil slicks as opposed to traditional diving and dredging methods, which are less efficient. These were well demonstrated by Total especially in ultra deep water drilling project in the North Sea, Angola and the Gulf of Mexico.

5.2.3.2 Developing New Energies

Oil reserves are becoming limited and usage has to be optimised as current sources will become exhausted and alternate sources of energy needs to be sought. Total is playing an

active role in developing new sources of energy. Technology will be key in developing the resources needed to meet the global energy demand, and this is a challenge that the industry as a whole must take on. The group is a European leader in marketing liquid bio fuels derived from ethanol and rapeseed esters. It also engaged other energy projects such as generation of electricity through windmills in France, harnessing solar energy in South Africa and the use of fuel cells to power automotives in Europe.

5.2.3.3 Improving Products and their Use

Total is striving to develop products with performances meeting the challenges of sustainable development. Eco diesel and Eco diesel plus have been included in the fuel range, both of which have been designed to lower environmental impact due to their low sulphur levels. This was complemented by the use of Eco boost in diesel and ETBE in gasoline. Total must be complemented, for being the first company in Southern Africa to lower sulphur levels by over 40%. It installed fuel vapour recovery equipment at its depots and service station to recover the vapour, which escapes during filling. These were initiated in its European operations and must filter to its global operations. Total is the only company in France to produce ETBE that is blended with gasoline in order to meet the octane number, low volatility and simultaneously reducing emissions of carbon monoxide and unburned components.

5.2.3.4 Integrating Operations into Local Communities

A company's existence is directly linked to the global environment as well as to the community in which it is based. It must maintain respect for human dignity, and strive towards a society where the global environment is protected. Total realised the importance of corporate social responsibility and is ploughing back support into communities. It forged relations with host communities emphasising communication and support to local development in the areas of healthcare, education and economic development. Support was also extended to: finding jobs for the youth, providing employment to the handicap, training entrepreneurs from disadvantaged backgrounds e.g. in Africa, assisting in projects in the Kruger National Park.

5.2.3.5 Promoting Sustainable Development

Total promoted sustainable development of the land, water and air e.g. curbing greenhouse gas (GHG) emissions, reducing releases and emissions of pollutants, and water management. In addition it engaged in rehabilitating industrial sites and protected biodiversity. It placed biodiversity in the depths of its policy of sustainable development focusing on the protection

of coastal ecosystems and marine prairies. In Africa, Total developed a process for treating used oil that successfully addressed local conditions. The unit, called Ecolub, is the only one of its kind in Africa and was designed to recycles used oil, which was mixed with heavy fuel oil and supplied as heating oil to local customers such as cement manufacturers.

The ecological environment still suffered setbacks as Total was the unfortunate victim of major environmental disasters such as the explosion at Toulouse and the sinking of the Erika vessel affecting the tourism and fishing industries along the Atlantic Ocean coast.

The four oil refineries in South Africa are a major contributor to air pollution emitting high levels of sulphur dioxide and several other chemicals known to cause ill health. Total has a role to play in meeting its sustainable development, as it has to introduce measures to reduce industrial and marine accidents including atmospheric discharges. The sinking of the Erika oil tanker in 1999 prompted Total, being the first oil company, to apply a 20-year age limit to vessels over 80,000 tonnes and a 25-year limit on others. In addition ships over 15 years old were prohibited from carrying heavy fuel oil other than for port bunkering. The next objective was to establish the link between Total's business strategies and sustainable development, discussed hereafter.

5.2.4 Linking Strategy with Sustainable Development

Sustainable development is growing rapidly and is a new concept for many business managers. The objective is to find ways to approach three goals: environmental protection, social well being and economic development simultaneously. It creates opportunities for suppliers to develop environmentally safer products and processes and to become more competitive. The quest for sustainable development requires the integration of economic, social, cultural, political, and ecological factors considering both local and global dimensions.

The economic, social, and ecological environments that form part of the external scan are directly related to sustainable development as demonstrated in the model in chapter 2 forming a link between strategy and sustainable development. Company profitability affects the economic factors of a country and subsequently impact on the GDP, which in turn contributes to economic growth. The critical triangle of development outcomes demonstrated the linkage between the economic, social and the ecological environments comprising of elements that are common to both economic growth and sustainable development. Traditional development efforts focused on achieving poverty reduction and social well being through economic

growth and not between environmental sustainability and economic growth or environmental sustainability and poverty reduction. This critical triangle of development outcomes represented a simple way to identify the essential institutional and policy linkages that needed to be at the core of the country's sustainable development agenda.

This was further illustrated by the IDP model, which integrated economic viability, social well being and biophysical integrity with sustainable development at the heart. Economic growth is function of the state and represents the increase of the nations wealth, with significant contributions hailing from organisations like Total. If economic growth is not managed by the state, this may pose harm to the environment especially in the absence of policy prescriptions and associated constraints.

Sustainable development objectives must be compared to competitive and financial strategies, and these should be consistent. The concept of sustainable development must be incorporated into the policies and processes of the business. Objectives must complement the business's existing competitive strategies to provide an additional dimension to business strategy and a benchmark against which performance can be measured. This discussion demonstrates that sustainable development should not be treated separately and it is time that organisations linked it to the business strategy.

5.2.5 Environmental Management and Sustainable Development

Environmental management supports an inseparable relation with sustainable development. The company obtained both EMAS and ISO 14001 certification in departments within its subsidiaries which was evident of its commitment to sustainable development. The Lube Manufacturing Plant and Island View terminal have been certified for ISO 14001. However this needs to filter through to other divisions without delay whose operations have the potential to cause environmental damage. The benefits will be compliance with regulations and increased focus of all stakeholders on environmental management. To obtain ISO certification the subsidiaries must set up environmental management departments and obtain guidance and consultation from certification bodies.

5.3 Overview of Sustainable Development

- The Brundtland Report defined sustainable development as "development that meets the needs of present without compromising the ability of future generations to meet their

own needs". The concept of sustainable development has been evolving for more than forty years and the major landmarks are highlighted as follows.

- Stockholm Declaration 1972: Highlighted problems of pollution, destruction of resources, damage to the environment, danger to species and the need to enhance human social well being.
- United Nations Environment Programme 1994: Focussed on Environmental policies, guidelines and actions.
- World Conservation Strategy 1980: Three major priorities were defined (1) to maintain essential ecological processes and life support systems, (2) to preserve genetic diversity of plants and animals and (3) to ensure the sustainable utilisation of species and resources.
- World Commission on Environment and Development 1983: This was commissioned to work outside the strict UN bureaucracy because UNEP had become the target of much criticism from western nations.
- World Conservation Union 1986: Five broad criteria were identified (1) integration of conservation and development, (2) satisfaction of basic human needs, (3) achievement of equity and social justice, (4) provisions for social self-determination and cultural diversity and (5) maintenance of ecological integrity.
- Our Common Future 1987: This contained a list of global requirements: a political system that secured the effective citizen participation in decision-making, a strategy to build a sustainable society and encouraged communities to interpret and adapt these recommendations to local conditions.
- Caring for the Earth 1991: Nine principles were announced with the goal to create a sustainable society that grew and prospered while living within the carrying capacity of the ecosystem and caring for all living creatures.
- Rio Summit 1992: This meeting addressed urgent problems of environmental protection, social and economic development.
- Agenda 21: This was an action plan formulated for the twenty first century, which stressed the importance of participation of ordinary people, including the poorest, in decisions affecting their welfare and that of their children and grand children.
- Towards Sustainability 1992: This was the fifth environmental action programme that called for progress on integrating sustainable development into all areas of policy making.

- Copenhagen Summit 1995: During this summit government adopted a declaration and programme of action that represented a new consensus placing people at the heart of development.
- Kyoto Climate Change Protocol 1997: Governments met in Kyoto to address problems of global warming where targets were set for the reduction of greenhouse gases.
- Johannesburg 2002. This conference highlighted problems of pollution, destruction of resources, damage to the environment, danger to species and the need to enhance human social well being and attempted to promote international cooperation on issues surrounding sustainable development.

5.4 Comments on Sustainable development

'Development is usually defined principally in terms of economic growth: as countries experience growth their productive capacity expands and they develop' (Michael, 1991: 15). As long as the population increases, it is difficult to imagine development without economic growth. Economic growth poses negative effects for the environment.

In documents such as the World Conservation Strategy, it fails to come to grips with the central issue of economic growth as the motor behind development. The discussion of sustainable development was principally addressed to the negative consequences of development; this might meet economic criteria but seriously underestimates ecological and social factors (1991).

The Department of Environmental Affairs and Tourism describes sustainable development as "the process of continuously striving for dynamic balance between: using and protecting the physical and natural environment and its resources; creating equitable and viable economic systems with an ethical basis; and acknowledging and guiding social and cultural systems and values towards greater equitability responsibility and human well being". The aim was to seek local solutions to improve the quality of life of all South Africans. In terms of the National Environment Management Act, sustainable development was defined as "the integration of social, economic, and environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations" (Coetzee, 2002: 2).

Van den Berg (1996) adduce that the Brundtland report is a political document meant to influence governments, industrialists, and scientists. The report has argued that the world

economy is totally interlocked with the earth's ecology, whereas institutions have remained independent i.e. institutions governing the economy are almost completely separated from those managing the environment. The Environmental policy towards sustainable development is based on the use of economic instruments and policies calling for environment and economics to be merged in all levels of decision-making.

Agenda 21 called on countries to reduce pollution, emissions and the use of precious natural resources. Governments need to lead this change but emphasises that everyone can play their part in tackling non-sustainable practices. In this way, local actions can lead to the solution of global problems. In addition Agenda 21 suggested that a policy based on the use of market-based instruments would allow governments to institute the following reforms (Markandya, 2002):

- Establish a policy framework that encourages the creation of new markets in pollution control and environmentally sounder resource management:
- Reform or recast existing structures of economic, fiscal incentives to meet environmental and development goals;
- Establish effective combinations of economic, regulatory and voluntary (self –regulatory) approaches;
- Remove or reduce subsidies that do not comply with sustainable development objectives; and
- Establish policies based on greater reliance on resource pricing

Agenda 21 suggested that the means for implementing these measures should include among others:

- Researching the environment and developing interactions with a view to assisting policy decisions
- Promoting public awareness; and
- Strengthening national institutional capacity

Agenda 21 advocates improving the decision making process in several areas, including:

- Integrating economic, social and environmental considerations at all levels in all ministries;
- Greater coherence of different policies;

- Monitoring and evaluation;
- Transparency of and accountability for the environmental implications of economic and sectoral policies;
- Access to information and effective participation; and
- Improving planning and management systems, including through environmental impact assessment.

5.5 Barriers to Sustainable Development

Van den Bergh (1996) identified the following barriers to sustainable development (1) Control of Economic, (2) Conflicting opinions and the necessity of compromises in the political arena, (3) Structural process, and (4) Opinions about ethical foundation of sustainable development. These barriers have to be removed in order to promote the proliferation of sustainable development. Control of economic can be achieved by implementation of environmental systems such as ISO 14001 and EMAS, creation of sustainable development departments within companies. These systems are geared to achieve effectiveness of polices as they are equipped with instruments to keep economic activities within ecological constraints. There are conflicting opinions in the political arena with regards to the prevalence of short-term over long-term objectives and the absence of political institutions to deal with international economic-environmental issues. Governments must play a role in creating institutions to manage these conflicts in order to improve economic and environmental issues. The structural process is related to economic growth, which is driven by aspirations of individuals, competition between private firms, government policies, technological progress, and international differences in welfare. The barrier lies in the increasing distance between cause and effects of environmental change. Stakeholders must play their role and become knowledgeable about the causes and effect of environmental change. Opinions about ethical foundation of sustainable development ask if the separate concern for the natural environment is necessary and whether the focus on economic benefits and future generations are sufficient. This opinion will always be there to question the definition of sustainable development due to the uncertainty of the future.

"The opportunities regarding possible actions for future sustainable development are limited and diminishing. A 'good' or acceptable development solution requires the fulfilment of at least three formidable assumptions" (Goodland et al, 1992: 48):

- We have a fairly good knowledge of the consequences of alternative paths of human activities in the future
- There must be an addressee to receive and use this knowledge
- This body or some other internationally accepted body be given the authority and power to choose the future path of development and enforce it

5.6 Sustainable Development and Investment

"Investment in all its different forms shapes our lives as well as that of generations to come. Investment in education, science, technology, culture, and communications, for example, continue to have crucial impacts on human welfare" (Goodland et al, 1992: 71). The degradation of today's resources is attributed to earlier investment decisions and is proportional to the scale and quality of consumption and production. Subsequently this calls for an increased understanding of investment processes for the better management of human-made and natural capital. Recent work has sought to analyse sustainable development more broadly; in terms of its economic, social and environmental dimensions and implementing sustainable development will need a new science that is referred to as sustainomics.

5.7 General Recommendations

Recommendations were mentioned in the preceding discussions under the items measured and in addition the following should be considered:

- In order to obtain firm commitment, sustainable development targets should be listed in the job description of all employees, clearly defining responsibilities and accountabilities.
- Incentives must be offered for objectives that exceed targets.
- Sustainable development objectives should be reflected throughout the value chain including business planning, appraising raw material suppliers, procurement, production, packaging, sales and marketing, logistics, and after sales.
- Financial planning must take into account savings generated by sustainable development initiatives and reflect these on financial statements.
- Market research should uncover customer needs and knowledge regarding sustainable development and where this is lacking information must be provided.
- The company training prospectus should make sustainable development training mandatory across all levels.

5.8 Further Research Needed to be Conducted

The concept of sustainable development is an important milestone prescribing how society must be organised in terms of environmental protection whilst taking economics factors into account. It is a discipline, in which the expanse of knowledge is extremely broad with the Internet providing virtually millions of sites on this subject, not forgetting the vast amount of literature that is available from resource centres. It was impracticable to cover all areas of this field thus providing the opportunity for further and future research. In terms of further research, this will coincide with limitations identified in chapter 1, which are as follows:

- This study interrogated the strategic focus area of Total's commercial and specialties business unit to a larger extent compared to the other units of the company.
- It was carried out on the parent company in Paris and converged onto the South African subsidiary.
- An intensive interrogation of competitor activity was not carried out as the study concentrated on linking Total's business strategies to sustainable development.
- Financial analysis was also limited to prevent exposure of confidential information to competitors.
- The period of analysis for financial, and corporate social responsibility indicators spanned the years 2001 to 2003 as up to date information was unavailable at the time of literature search.

Further research is required to interrogate the entire strategic focus area. Total is an international petroleum manufacturing and marketing company with hierarchical departments. This study focussed predominantly on the commercial and specialties business unit, which covers production, technical and marketing. The study can be extended to all units including logistics, financial, transformation, manufacture and supply and human resources. These departments are highly structured and were included to a lesser extent in the study. The manufacture and supply department is responsible for maintaining the optimum supplies of crude for refineries and sustaining the refined fuel requirements for the consumer markets. This will be appropriate for a doctoral thesis, as high volume of data will have to be processed.

The study was carried out at the head office in Paris and the South African subsidiary. It can be carried out in all subsidiaries and a comparison can be drawn. Total is a multinational corporation with investments in every continent. A study of this nature will be data intensive

and will require the efforts of group as opposed to an individual. This will provide essential information as to which subsidiaries are complying with the requirements of sustainable development. It will provide useful insight into the sustainable development requirements of the host countries apart form those prescribed at international conferences.

An intensive interrogation of competitor activity was not carried. There are many players in the field and the study can be carried across all. This will provide useful benchmarking information and the positioning of Total relative to its competitors with regards to sustainable development. A triangulation study can be carried out including both qualitative and quantitative studies. The qualitative study will focus on the case study of the participating companies highlighting their sustainable development contributions. Questionnaires can be sent to the both major and minor petroleum companies in one geographical area. It must be noted that not all participants will be willing to divulge financial information and strategies due to confidentiality reasons. The data can be subjected to statistical analysis and depending on the sample size, inferences can be drawn.

Financial analysis was limited due to the unavailability of strategic information. Only selected financial information, which were related to profitability, were incorporated into the financial analysis. Companies are not keen on making information available to the public as they can be scrutinised by competitors and used against the company. This places the company in a risky position with the possibility of business loss. In case of the majors, the barriers of entry are high and start up costs are capital demanding. If such information is available, then a more detailed profitability analysis can be performed. The analysis should also reflect costs and savings associated with sustainable development.

The period of analysis for financial, and corporate social responsibility indicators was from 2001 to 2003. This was due to the unavailability of information at the time of search. The incorporation of most recent information into the study will present a more accurate analysis and facilitate the process of strategic planning.

Besides the limitations the vastness of the field provides opportunities for future studies and a few possibilities have been cited.

- Analysis of the various costs such as (1) preservation costs, (2) benefits of sustainable development cost and continuous improvements costs using sustainable development accounting. This study will appraise the cost/benefit analysis implementing

sustainable development. It will be a numerical study and will look into areas such as the ecology of commerce. Environmental accounting, natural resource accounting, economic accounting, depreciation accounting, user cost approach, can be used to analyse sustainable development.

- Identify the extent to which companies integrate sustainable development strategies into the business strategy. This study will be quantitative and can be applied across different samples including industrial, commercial and government sectors. Questionnaires can be sent out to the target population and responses can be subjected to statistical analysis.

5.9 Conclusions

This dissertation focussed on two major areas, the former evaluated the profitability of Total using the tools of strategic management whilst the latter studied Total's sustainable development initiatives, both in the international and South African environments. The question was raised in the Co-operative Bank Partnership Report 1999 (Internet 81), "Can an organisation that conducts its business in a socially and environmentally responsible manner also be consistently profitable? We believe it can. In fact we believe that, in the years to come, the only truly successful businesses will be those that achieve a sustainable balance between their own interests, and those of society and the natural world". This question was posed in 1999 and six years later this belief still stands as is evident in the case of this study. Total is a successful multinational company having committed resources to both sustainable development and business development. This question formed the vary basis of this research. The company crafted well-defined business strategies, which complied with tests of suitability, acceptability and feasibility. In the same breadth sustainable development strategies were given priority. The Co-operative bank report further stated, "It is not just the environment that benefits from enlightened business practices. Companies committed to sustainable development continued to outperform the world's stock markets in 1999, according to the second annual presentation of a global index of the world's "most sustainable firms". In the first half of 2000, the return on equity of the Dow Jones Sustainability Group Indexes (DJSGI) averaged 15 per cent, compared with just 8 per cent from companies in the regular Dow Jones Index

Total identified five main areas of action: leveraging oil and gas resources, developing new energies, improving products and their use, integrating operations into the local community

and promoting sustainable development. These were emphasised throughout the study and initiatives taken by Total were also discussed. In a constantly changing world, sustainable development is a process that meets the needs of the present without compromising the ability of future generations to meet their own needs. The oil and gas industry is facing formidable challenges and conversely remarkable opportunities. Total will need to maintain its ability to develop and implement large projects in an increasingly complex world, meeting both technological challenges and stakeholder expectations. Technological innovation and improved stakeholder dialogue will be key success drivers.

Corporate-level sustainable development initiatives affect actual business practice and, in particular, the challenge that managers face in responding to multiple and sometimes competing expectations. It also highlights business's dependence on human and natural resources, in addition to physical and financial capital. It emphasises that economic activity must not irreparably destroy the environment

It must be noted that sustainable development cannot be achieved by a single company in isolation and every individual in the planet must subscribe to the challenges, if we are to meet today's needs without compromising the ability of future generations to meet their own. Environmental excellence must become part of strategic thinking to meet this global objective.

This concept embraced social equity, cultural integrity, international justice, and environmental balance. Successful realisation of sustainable development involves a change in both ideas and actions. The challenge is for organisations to integrate social and environmental concerns into the existing strategies.

"I hope corporations understand that the world is not asking them to do something different from their normal business; rather it is asking them to do their normal business differently. The more progressive and dynamic among them are already seizing the opportunities of an alternative, sustainable future. I hope this can grow to become a new norm" (Internet 76).

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